

— GRANDFATHER MOUNTAIN —

Hand Book of North Carolina

THE FARMS
ORCHARDS &
VINEYARDS

THE FORESTS,
MINES AND
FACTORIES.



LANDING OF SHAD & STRIPED BASS



STEAM FISHING BOAT



HAND-BOOK
OF
NORTH CAROLINA,
WITH
ILLUSTRATIONS AND MAP.

STATE BOARD OF AGRICULTURE.

RALEIGH:
PRESSES OF EDWARDS & BROUGHTON.
1893.



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PREFACE.

At the request of T. K. Bruner, Secretary to the State Board of Agriculture, in the month of May last I undertook the work of preparing a new edition of the Hand-Book of North Carolina. Two previous editions, by different compilers, had been issued, each one of which was considered satisfactory presentation of the varied conditions of the State as they then existed; but as there had been a great increase in the industries, population and prosperity of the people of North Carolina from the issue of the first edition in 1874, to that of the second in 1883, so it was to be reasonably assumed from the latter period until the present the changes had been equally as marked; greater, in fact, because the greater the removal from that era of poverty and desolation which had followed the war, and the subsequent agitated and uncertain conditions, the greater the incitements, aids and encouragements to rapid and full recuperation.

It was desirable to prove the extent of this recuperation, the magnitude and extent of the onward progress, the addition to the subjects of industry, and, perhaps, more interesting and valuable than any other subjects, the progress of intellectual enlightenment, and the extent of the educational advantages extended to the youth of the State.

An event was approaching which was particularly calculated to call from the State an intelligent exhibit of its resources, an outline of its transactions, and a picture of the field in which the capacities and the aspirations of the people were most apt to illustrate themselves. This was the great Columbian Exposition to be held in Chicago during the coming year, and in which it was not only desirable that North Carolina should take part, but anticipate the part she was expected to take by such publication of her natural and improved conditions, her topography, climate and products, her institutions, her manufactures, her internal improvements, her ores and her minerals, as would satisfy

public expectation and justify the ambition of her own people to enter into friendly rivalry with her sister States, and with the world.

It is believed that the present Hand-Book will contribute largely to correct many misapprehensions about North Carolina, the growth of its former timid modesty, and the absence of information which men of energetic public spirit could have earlier imparted. The extent of information given, the great number of subjects treated of, the greatness and liberality of its public institutions, the generosity and comprehensiveness of its educational systems, the extent of its internal improvements, the number and variety of its manufactures, the curious admixtures and value of its agricultural pursuits, the extensive diffusion of its ores and metals, precious as well as the industrially useful, and also the universally salubrious and temperate climate, which is enjoyed from the sea-coast to the mountains, will certainly awake the interest due to the many subjects brought to view.

It may be added that they are brought to view with rigid regard to facts, with laudable object to give them wide publicity; with truthful purpose to present them as they are, without the coloring of exaggeration, and without the distortion of untruthfulness or detraction. A large portion of the facts are drawn from official records and the statements of statistics; and such being the case, it was impossible to have presented anything entirely new, since such facts as relate to topography, mineralogy, forestry, climate and kindred topics, once ascertained admit of few changes. Therefore to Prof. W. C. Kerr, the Rev. Dr. M. A. Curtis, Professor Holmes, Mr. Hanna, and other scientific authorities, and also to the reports of the various State departments, are due a large portion of the information conveyed in this publication. Acknowledgments are also made to the edition of 1883, from which, in some instances, copious extracts are made. I have, in addition, secured much material by personal research, particularly in relation to the fisheries, manufactures, some subjects of agriculture, the mountains and rivers, and some of the newly introduced subjects of industry, such as truck farming, canneries, viticulture, etc. To information on climate, I am largely indebted to Dr. H. B. Battle; and to the articles on ores and minerals, gold, iron, copper, etc., to Prof. G. B. Hanna and Prof. J. A. Holmes, State Geologist.

More space than is due, in proportion to the extent of the work, is given to the description of counties. It is to be regretted now that it was so applied. It is a great, a fruitful, and a very important subject, and in point of usefulness merits a distinct work, for elaborate special description of the counties will be of more value to them and to the State than any other mode of inviting attention to their resources and characteristics. As it is, too little is said of such counties as could not be visited, and also too little of those which were visited, and had thus their importance demonstrated. The number of ninety-six counties is too great to be treated incidentally, and yet they could not be wholly omitted. I think the attention of the Legislature may properly be called to this subject.

I cannot close this subject without reference to the generous aid extended by the officers and attaches of the Agricultural Department, to Commissioner John Robinson, to Secretary T. K. Bruner, and to Dr. H. B. Battle, Director of the Experiment Station. Drawn more closely in connection with Mr. Bruner, it is pleasant, as it is just, to render tribute to his interest in the Hand-Book, to his energy, his intelligence and his industrious research, by visits and by correspondence, to comprehend every subject that was attainable, that, in a publication designed to illustrate North Carolina on the wide stage of the world's survey, could add to the honor and interest of his native State.

Circumstances beyond my control compelled a somewhat hurried and abbreviated presentation of the subjects embraced in the present volume. Nevertheless, I believe the Hand-Book will aid in giving that publicity to the conditions of North Carolina sought to be obtained by bringing it to the knowledge of the visitors to the Columbian Exposition.

J. D. CAMERON.

ASHEVILLE. N. C., December 18, 1892.

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LOOKING SOUTHWEST FROM BLOWING ROCK.

HAND-BOOK OF NORTH CAROLINA.

GENERAL SKETCH.

The State of North Carolina is bounded on the north by Virginia, east by the Atlantic Ocean, south by South Carolina and Georgia, and west by Tennessee. It is included nearly between the parallels 34° and $36\frac{1}{2}^{\circ}$ north latitude, and between the meridians $75\frac{1}{2}^{\circ}$ and $84\frac{1}{2}^{\circ}$ west longitude.

The extreme length of the State from east to west is $503\frac{1}{4}$ miles; its average breadth is 100 miles; its extreme breadth is $187\frac{1}{2}$ miles. Its area embraces 52,286 square miles, of which 48,666 is land, and 3,620 is water.

Its topography may be best conceived by picturing to the mind's eye the surface of the State as a vast declivity, sloping down from the summits of the Smoky Mountains, an altitude of nearly 7,000 feet, to the level of the Atlantic Ocean. The Smoky Mountains constitute a part of the great Appalachian chain, which here attains its greatest height; the greatest, indeed, in the United States, east of the Rocky Mountains. This slope is made up of three wide extended terraces—if that term may be allowed; the first a high mountain plateau—distinguished as the Western or Mountain Section; the second, a submontane plateau, distinguished as the Middle Section, of which the western half is further distinguished as the Piedmont Section; the third, the Atlantic plain, distinguished as the Low Country or Eastern Section, and that part from the head of the tides downward as the Tide-water Section. From the first to the second section there is a sharp descent through a few miles only of not less than 1,500 feet; from the middle to the low country a descent of about 200 feet; through the two latter, however, there is a constant downward grade.

THE MOUNTAIN SECTION.

This is so sharply and distinctly defined, and embraces so large a portion of the territory of North Carolina, as to merit a somewhat extended reference to its magnitude, its elevation and its character-

istics. Broadly considered, it may be treated as a high plateau, bounded on the east by the irregular chain known as the Blue Ridge, extending across the State in a general direction from north-east to south-west, until, reaching the south-eastern border of Henderson County, it turns to the west and forms for a long distance part of the southern boundary of the State, passing at length by a south-west projection into the State of Georgia, and again reuniting with the chain of the Smoky Mountains, to which it had made near approach on its entry into North Carolina in the counties of Ashe and Watauga.

The average elevation of the Blue Ridge is nearly 4,000 feet, though on the southern and northern extremities it drops to 3,000 feet, its lower gaps being a little above 2,000 feet over the main level of the piedmont country. Seen from the east, the chain presents the aspect of a steep and rugged escarpment springing suddenly from the piedmont plateau to an altitude of from 2,000 to 3,000 feet above it. From the west the appearance is that of a low and ill-defined ridge, in some places, as in parts of Henderson and Macon Counties, presenting almost a smooth, unbroken horizontal line: again uplifting itself in bold prominence, attaining the height of nearly 6,000 feet, as in the Grandfather, and the Pinnacle, the conspicuous summits so attractively visible near Round Knob, on the Western North Carolina Railroad.

The western boundary of this division is that long chain known under the various names of the Iron, the Smoky, and the Unaka Mountains, and forming the dividing line between North Carolina and Tennessee, and enclosing with marked definiteness the plateau of Western North Carolina. The area of this division approximates 6,000 square miles. The plateau is the culminating region of the Appalachian system, and contains not only its heaviest masses, but also its highest summits. It is divided by a number of cross chains, and consequently with a number of smaller plateaus or basins, each bounded on all sides by high mountains, and having its own independent system of rivers or drainage. It is this connection or interlacing of the outside bounding chains by the agency of the numerous cross chains that gives Western North Carolina its marked mountain character, its alternation of high mountain ranges with corresponding valleys and their attendant rivers, and the numerous lateral spurs, penetrated also by their valleys and their mountain torrents, and all arranged with an order and a symmetry as rare as it is beautiful, and also presenting facilities for communication from the opposite sides of these chains of inestimable value in

the construction of works of internal improvement not often possessed by mountain countries, in their general aspect tumultuously upheaved in defiance of human advance among their recesses.

THE CROSS CHAINS.—The chief of these in exceptional elevation is known as the Black Mountains, consisting of two chains—the North-west and the Main chain—the united length of which is about forty miles, extending in a north-west direction from the Blue Ridge through the counties of Buncombe and Yancey, and forming a link of connection between the Blue Ridge and the Smoky Mountains. These united chains comprise twenty-five peaks in all, twenty of which are upwards of 6,000 feet in height. Between the French Broad and the Pigeon River stretches the long chain of the Pisgah and the New Found Mountains, interrupted by the valley of Hominy Creek, the opening of which offers convenient passway to the next parallel range, the Balsam Mountains, which extends in unbroken continuity from the South Carolina line on the south to the Smoky Mountains on the Tennessee border on the north. This range has a mean elevation of about 5,500 feet, with fifteen summits exceeding 6,000 feet; and across the range are only two passways or gaps suitable to the passage of wheeled vehicles, one of which, traversed by the Western North Carolina Railroad, is 3,357 feet above sea-level; the other, Soco Gap, being 4,341 feet high. Then comes the Cowee chain, extending nearly across the State, and separated from the Smoky Mountains by the narrow valley of the Tuckaseegee River. The mean height of this chain is about 4,800 feet, the highest summit, at the southern end, being Yellow Mountain, 5,133 feet. Then succeeds the massive and very bold double chain of the Nantahala and Valley River Mountains, with a mean height of 5,000 feet, the two branches of which lie in close parallelism from the Georgia State line on the south as far as the Red Marble Gap on the north, where they separate, one branch directed westward and known as the Long Ridge, and uniting itself with the Smoky Mountains in Cherokee County; the other extending to the north-east, under the name of the Cheoah Mountains, and ending without definite connection in undefinable chains or isolated peaks.

On the east side of the Blue Ridge are a series of independent chains with probable geological identity, but physically detached. Among these are the Saluda, Green River, Tryon and Hungry Mountain ranges, nearly parallel with the Blue Ridge, but separated by the deep valleys or gorges cut through them by the angry torrents which have cut

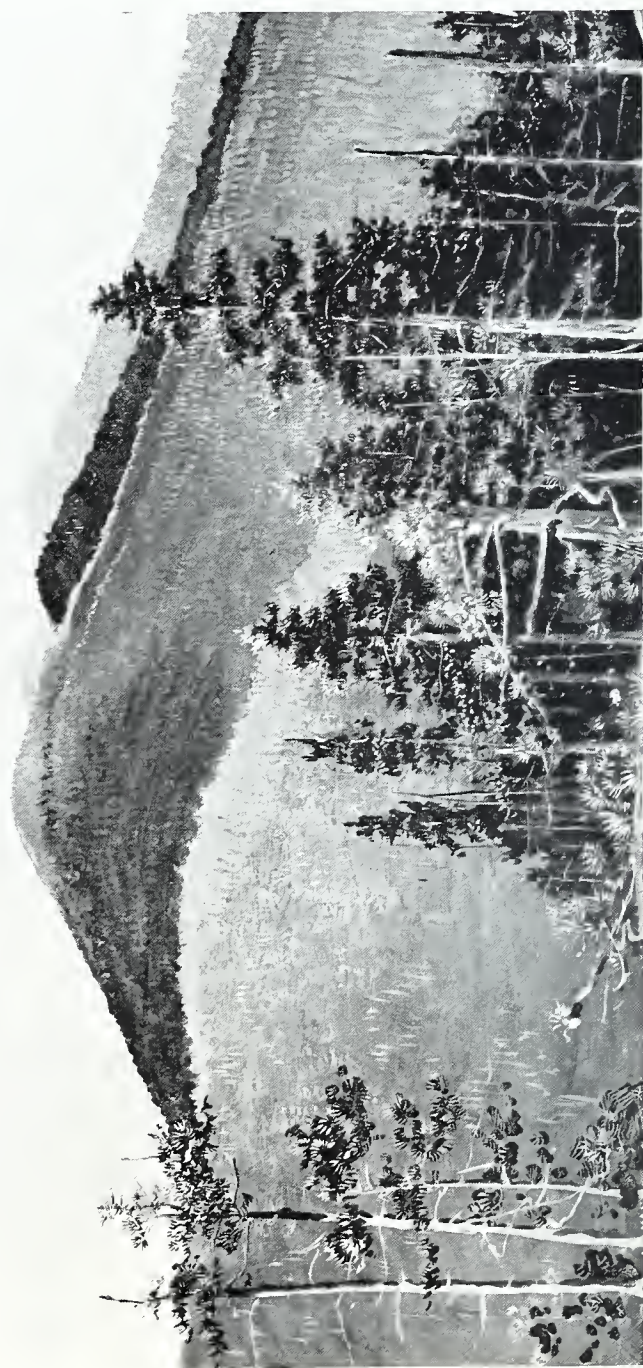
through them to unite with the waters flowing toward the Atlantic; the waters on the west of the Blue Ridge, on the contrary, all directing their courses towards the Mississippi or its tributaries. Another series of ranges in general parallelism with the Blue Ridge, but with wide interval of plain and valley between the two, may be considered as one, but with capricious outcrop, at one point appearing in bold continuous chain, then disappearing, and, at wide interval, rising again and pursuing a south-easterly direction, to unite itself with the mother range. This is the range which lifts itself abruptly in Stokes County as the picturesque Sauratan, with a mean elevation of 2,200 feet, to sink and rise again in the solitary monument of the Pilot Mountain; then again to disappear to give place for the broad, fertile valley of the Yadkin, to rise again and expose to view the lengthened chain of the Brushy Mountains, again to sink, then rise again in solitary height near Connelly's Springs, and then rise again in southern Burke to dominate a very beautiful landscape as the South Mountains.

The Linville Mountains, though distinct from the Blue Ridge, are so coincident with it in perspective and in general characteristics as to need no mention as a distinct range.

In the southern part of Randolph County, and extending into the county of Montgomery, appear the comparatively insignificant range of the Uwharrie Mountains, nowhere attaining an elevation of more than 1,500 feet,—rough, rocky and barren, except in mineral wealth, gold being found at many points in the range, and having been worked with great profit by many investors.

East of these mountains, in the counties of Orange, Durham and Person, appear frequent outcrops of mountain formation reaching in general characteristics almost the dignity of mountains, but nowhere rising to the elevation of 1,200 feet above tidewater. These detached outcrops may be grouped in the general term of the Oconeechee Mountains, and are the last efforts of the forces of upheaval in the direction of the sea to lift the earth above its normal level.

The above embrace the whole mountain system of North Carolina, and in the western section unmistakably present the culmination of the great Appalachian system, as illustrated by the highest summits lifted up in all the territory of the United States east of the Rocky Mountains, and also as the source from which many large rivers radiate to flow towards the opposite directions of the Atlantic Ocean, the Gulf of Mexico, and the Mississippi River and its tributaries.



THE BLACK BROTHERS FROM MOUNT MITCHELL.

Along the Blue Ridge, along the Smoky Mountain range, and along the cross chains are found the following summits which exceed 6,000 feet in elevation:

IN THE SMOKY MOUNTAINS.—Mount Buckley, 6,509; Clingman's Dome, 6,660; Mount Love, 6,449; Mount Collins, 6,188; Mount Alexander, 6,447; Mount Henry, 6,373; Mount Guyot, 6,636; Tricorne Knob, 6,188; Ravens Knob, 6,290; Thermometer Knob, 6,157; Luftee Knob, 6,238; Cataloochee, 6,159; Roan (High Knob), 6,306; Roan (High Bluff), 6,296; Grassy Ridge (Bald), 6,230; Cold Spring, 6,130.

IN THE BALSAM MOUNTAINS.—Enos Plott's Balsam, 6,090; Jones' Balsam, 6,224; Rockstone Knob, 6,002; Brother Plott, 6,246; Amos Plott's Balsam, 6,278; Rocky Face, 6,061; Double Spring Mountain, 6,380; Richland Balsam, 6,425; Chimney Peak, 6,234; Spruce Ridge Top, 6,076; Reinhardt Mountain, 6,106; Devil's Court House, 6,049; Sam's Knob, 6,001; Cold Mountain, 6,063.

IN THE BLACK MOUNTAINS. — *North-west Chain* — Blackstock's Knob, 6,380; Potato Top, 6,300. *Main Chain*—Black Dome, 6,502; Mount Gibbs, 6,501; Mount Hallback or Sugar-loaf, 6,406; Mount Mitchell, 6,717; Balsam Cone, 6,671; Black Brother, 6,619; Cattail Peak, 6,611; Hairy Bear, 6,610; Deer Mountain, 6,203; Long Ridge, Middle Point, 6,259; Bowlen's Pyramid, 6,348.

IN THE CRAGGY RANGE.—Big Craggy, 6,000.

In all forty-three peaks of 6,000 feet and upwards. And there are eighty-two mountains which exceed in height 5,000 feet, and closely approximate 6,000, and the number which exceed 4,000 and approximate 5,000 is innumerable.

The general contour of all these mountains is gentle, the summits generally presenting smooth rounded outlines, occasionally rising into sharp pointed peaks, and, except on the southern border, presenting little of precipitous formation. There, some of the most stupendous cliffs or precipices east of the Rocky Mountains present themselves, such as Cæsar's Head and Whiteside Mountain, the latter presenting a sheer perpendicular front of naked rock eighteen hundred feet in height.

Otherwise the mountains are covered with deep rich soil, clothed with massive forests to their tops. To this general condition there is the remarkable exception presented by the locally named *balds*, natural meadows found on the rounded tops of many of the highest mountains.

Their elevation is generally near, or above, 6,000 feet. The heavy forest growth of the valleys and lower slopes of the mountains is gradually dwarfed towards the bald summits, so that these are surrounded by a fringe of stunted, scrubby oaks, beeches, &c., the *balds* themselves being covered with a rich herbage of grass, pasturage to which large herds of domestic animals are annually driven to remain until the return of cold weather.

The great elevation of these mountain heights is indicated by the botanical features of the vegetation, which shows a predominance of firs, hemlocks, white pines, and other trees of high latitudes.

In respect to those timber trees found here, in common with the other sections, the Mountain Section has the advantage of possessing an unbroken forest. In comparison with the extent of forest lands, the clearings here are mere patches.

There is little hazard in saying that there is nowhere in any of the States an equal area of land covered with timber trees of such various kinds, and of such value. The walnut, tulip trees (poplars), and oaks attain a size that would hardly be credited by one who had not seen them. The preservation of this magnificent forest is due to the fact that it has hitherto been inaccessible to transportation. Within the past few years much of it has been brought into connection with the markets of the world. One railroad line passes entirely through this section, and another branching off at Asheville and leading to the extreme southwest of the State, is in great part completed. Into the northwestern part of the State also a railroad has been completed and others projected, of which two are partially graded.

The cultivated productions of this section are the same with those of the Middle Section, cotton and rice excepted. Its garden vegetables are the same, but the cabbage and the Irish potato grow here to a degree of perfection that cannot be excelled anywhere. Among the fruits, its apples are noted for size and flavor. Peaches and grapes grow well generally; but, for their highest perfection, nature has made provisions by a suspension to some extent of her ordinary laws. Throughout the mountains, in certain localities and at certain elevations, there are horizontal belts where frost is never known. Such localities are found not only in this section, but in the South Mountains and in the Brushy range. They constitute an unfailing source of supply of these fruits, and in process of time will be occupied by establishments for canning fruits for the markets of the world.

The climate of this section differs less from that of the Middle Section than would be inferred from its higher altitude. The difference is more perceptible in summer than in winter. In the former season, its cool and bracing air, together with its varied scenery, its mineral waters—sulphur, chalybeate and thermal—made this section one of the favorite resorts of the people of the South and Southwest when it could only be reached by private conveyances. Since it has been penetrated by railroads, the influx of health and pleasure-seekers has increased an hundred fold, and in future will add very largely to its resources.

It is the resort, too, of people from the far North in winter. It is protected by the range of mountains which form its boundaries from all the cold winds—the north-east, north and north-west. The degree of cold is therefore temperate. A pinching season may come at long intervals; it is, however, of short duration, being quickly

succeeded by weather of a moderate temperature. Such seasons are not unwelcome by way of contrast. The quantity of snow that falls here is less than that of the Middle Section. Even in the high mountain ranges, cattle are excluded from pasturage by the snow only once in about seven years.

The soils of the basins of the great rivers of this section, and its mountain valleys, are noted for their fertility. The capacity for the production of cereals and hay grasses is equal to those of any lands. As might be inferred from the heavy forest growth with which the entire surface is covered, the mountain sides are susceptible of profitable cultivation up to their summits.

Among the valleys most noted for their beauty and extent are the Upper French Broad and Mills River Valleys, of Henderson and Transylvania; the Swannanoa, in Buncombe; the Pigeon River, Richland and Jonathan's Creek flat lands, in Haywood; those of the Valley River and Hiwassee, in Cherokee; and portions of the Upper Linville, in Mitchell.

The entire transmontane country is well adapted to stock-raising. The cultivated grasses flourish everywhere with even ordinary care. But it is in the north-western counties—particularly in the counties of Ashe, Alleghany, Watauga, Mitchell, Yancey—that all the conditions are found necessary for its perfect success. The soil throughout these counties is a deep rich loam, up to the summits of the mountains. The whole country is covered with a dense vegetation, amongst which will be found some of the largest timber in the United States, and as yet the forests are comparatively unbroken, because they have been inaccessible to market. The clearing of the timber is a work of some difficulty, but when that is done the labor of the farmer is rewarded with the richest crops. After two or three crops are taken off, the land, if suffered to lie at rest, springs up spontaneously in timothy, herds grass, and other rich pasture grasses; and once established, the grass perpetuates itself upon the land. Nor is an entire clearing necessary to establish the land in grass. If the undergrowth is removed, the trees thinned out, and the surface stirred and sown in orchard grass (Cocks foot), it flourishes luxuriantly, even while the forest trees are left standing.

Its capacity as a grazing country has long been known. But formerly the cattle were left to the resources of nature, which, indeed, in such a country were abundant and rich. "Horses and horned cattle," says General Clingman in one of his publications, "are usually driven out into the mountains about the first of April and brought back in November. Within six weeks after they have thus been put into the range, they become fat and sleek. There are, however, on the top and along the sides of the higher mountains ever-green and winter grasses on which horses and horned cattle live well through the entire winter. Such animals are often foaled and reared there until fit for market, without ever seeing a cultivated plantation." Of late, attention has been turned to the breeding of fine stock, and some herds of cattle and flocks of sheep are found there which will compare not unfavorably with those of any country. This country is already penetrated by one railroad, and others are in course of construction. When fairly laid open to railroad communication it will offer—besides its rich mining interests and timbers—one of the finest fields for cattle and sheep breeding and for dairy products that the Union presents.

Apart from its forests, nature has been prodigal to this section in shrubs and flowering plants. It has always been a favorite resort of the botanists. It is a field that has been assiduously cultivated by many of the most distinguished professors of that science. It was from these mountains that Bartram, the Michaux—father and son—Fraser, Delile, Lyon, Nuttall, Von Schweinitz, Mitchell, Gray and Curtis, drew much

of the material of their valuable contributions to botanical science. It was here that some of the most beautiful flowers that adorn the gardens of Europe and of this country were first discovered. It still yields rare flowers to the explorer, which though not conspicuous for their beauty, are deemed rare treasures by botanists.

This section has also been one of the chief sources of supply of medicinal herbs. Immense quantities are gathered and shipped to the Northern cities and to Europe. In travelling through the mountains bales of these herbs may be seen collected about the country stores as bales of cotton are seen in the Middle and Eastern Sections. Ginseng in great quantities is shipped to China. The trade in medicinal herbs has grown into a large business.

Corundum abounds in Macon, Clay and many other counties. Mica is abundant in Mitchell and Yancey, and those counties yield a large part of the world's supply. The largest and finest sheets of it seen at the World's Fair at Vienna were from the Ray Mine in Yancey.

This section is rich in iron ores of the best grade. That of Cranberry possesses such excellence for making iron for special purposes—steam boilers for example, and steel of the finest quality, such as is adapted to making surgical instruments and the like—that a railroad forty miles long has been constructed through one of the most rugged parts of the mountain territory to reach it. Copper also is prominent among the metals of this region. The most noted mine is that of Ore Knob, in Ashe. It has been extensively developed, and the business in all its branches is conducted with intelligence, skill and energy.

The effect of these mining enterprises upon the prosperity of this section has been marked. Labor has found profitable employment, a home market has been furnished to the farmer, and there has been a general appreciation of property of every kind.

The last three years have been remarkable for the success with which the difficulties presented by the want of transportation in this State have been grappled with and overcome. These achievements at once great and beneficent, will make this period a memorable one in the history of the State. Railroads are now entering the north-western part of the State in several directions. The completion and connection of these, and the opening up of this region, so rich in elements of undeveloped wealth, is now regarded as the first and most imperative duty of the statesmen of North Carolina.

MIDDLE AND PIEDMONT SECTION

Is intermediate between the Mountain Section, already spoken of, and the Eastern Section, which extends to the coast. It comprises nearly one-half the territory of the State. In passing into this section, either from the Western or the Eastern, a marked change is at once observable in topography, in production, and largely in industrial pursuits. The tumultuous continuity of mountains subsides into gentle undulations, a succession of hills and dales, a variety and charm of landscape, alike different from the high, uplifted mountain elevations and the flat monotony of the plains or levels of the east. Every step brings to view some new charm, some new arrangement of the rounded hills, some

new grouping of the tracts of forest which still cover so large a part of the country. The hills, indeed, in their gracefully curving outlines, present lines of beauty with which the eye of taste is never satiated. These are attractions which depend upon permanent features of the landscape, and which, though infinitely heightened in their effects by the verdure of spring and summer, are only brought into fuller relief by the nakedness of winter. The variations of surface, though less defined at first, become more marked towards the west, and towards the Blue Ridge the country assumes a bold and even rugged aspect.

The hand of improvement is more visible in this than in any section in the State. This is chiefly due to two causes—

1. Agriculture here was less dependent upon slave labor than in the Eastern Section. The number of slaves was less, and in many communities within its limits—as those made up of the Society of Friends, or Quakers—there were none. Hence, agricultural industries, which were prostrated there by the shock of the civil war—a shock from which it did not recover before years had elapsed—here sustained only a partial disturbance, and that for no long period.

2. No part of this section was occupied for any length of time by hostile troops, and at the end of the war its means of subsistence were comparatively undrained. A basis was left for the resumption of industries. To this is to be added another advantage—the facility with which lands of the best class could be rented after the break-up of the old plantation system. All the large proprietors, after the loss of their slaves, had more land than they could cultivate. The only use they could make of it was to let it to rent. To young and energetic men a golden opportunity was thus offered. They went to work, stimulated by the desire to redeem the time lost during their service in the army, and by the hope of acquiring lands of their own. But everyone had lost heavily. The impulse to repair those losses was universal. Labor, from the predominance of the white race here, was not greatly inadequate to the demand. Hence, every kind of business was pressed on with spirit and zeal. The effect, in a few years, was to obliterate all the deeper traces of the war; then the work of improvement began, and has been steadily carried on. This section is now dotted over with thriving villages and towns. The homes everywhere indicate a high degree of thrift and comfort. An unusual proportion are built in modern style, and tastefully painted. Nestled amidst yards and gardens, enclosed with neat painted palings, flanked with orchards of fruit trees,

in which a space is generally allotted to choice grape vines, they give abundant proof of ease, plenty, and, in many instances, of no small degree of luxury.

It is in this section that the great water-power of the State—estimated by the late State Geologist, Prof. W. C. Kerr, at three million horse-power—finds its greatest development and employment. It is through this section that flow the upper waters of the Dan, the Roanoke, the Tar, the Neuse, the Cape Fear, the Yadkin and the Catawba, and their numerous affluents. All of those have been utilized by the erection of corn, flouring and saw-mills in every neighborhood, and cotton and woolen mills on almost all of the rivers and their tributaries. Within the last few years the number of cotton-mills has largely increased. Those erected lately are spacious buildings, and equipped with the best machinery. Within the same period all or nearly all of the older ones have been enlarged and new machinery put in. The fact begins to be more and more recognized that within the cotton States there are advantages for the manufacture of that staple that cannot be found elsewhere. Here the cotton is at the door of the manufacturer, and the prime cost of the material is therefore less. Wages are less here than in the Northern States, and a lower rate of wages here affords a more comfortable living than a higher rate there, for the necessities of life are cheaper, and less of food, clothing and fuel are required. Less fuel, too, is required for heating the mill in winter. The laborer can make substantial additions to his means of subsistence from his garden, which is always allotted here to the head of the family. Here there is no obstruction to machinery from ice in winter, and no greater suspension of work from drought in summer, for our rivers are as long as those of New England, and have as many tributaries. The original cost of the site and of the building here is very much less than the same cost there. The force of these reasons cannot be long resisted.

At a subsequent place in this volume will be noted what has been done in North Carolina, chiefly in this Middle Section, in cotton manufacture; and also the steps taken to foster that of the woolen manufacturer, to which there are many of the climatic and economical inducements that so encourage and reward the manufacture of cotton.

The soil of this Middle Section presents a blending of the soils of the Eastern and Western divisions, the tertiary formation of the first pushing itself sometimes far towards the west until it comes into proximity with the secondary formation of the Piedmont Section, and often, in



TURPENTINE FOREST.

its extreme western extension, partaking of the character of the primary formation of the Mountain Section. A soil so composed or diversified, in connection with favorable climatic conditions, offers great agricultural possibilities, and in this section we find the widest range of production. It is here that we find the largest area devoted to the cultivation of the most profitable varieties of tobacco, and it is here that the culture of cotton is largely extended and profitably pursued; and it is here also that all the cereals and all the grasses are cultivated in their highest perfection, enlisting the leading agricultural interest of the population. Here also the fruits of the temperate zone find congenial home—apples, peaches, pears, cherries, the small fruits and grapes being unexcelled in excellence, variety and abundance. In this section are also widely distributed the richest veins and deposits of the valuable ores and metals, including the precious metals, gold and silver, iron, copper and lead, and the only two coal formations found in North Carolina. These ores, and the mining operations connected with them, will be treated of in a chapter in this work prepared by the State Geologist. This region also abounds in varied and extensive forest wealth, which will be referred to in its proper place.

EASTERN SECTION.

The whole eastern portion of the State belongs to the quaternary system, with frequent exposure along the rivers, ravines, and ditches of the eocene and miocene epochs of the tertiary. It consists of a vast plain, stretching from the sea coast into the interior of the country, a distance of from one hundred to a hundred and twenty-five miles. Traversing this section from north to south are tracts of country which vary little from a perfect level. The Carolina Central Railroad has a stretch of one hundred miles where there is neither curve, excavation, nor embankment. From east to west the surface rises by easy gradations at the rate of a little more than a foot to the mile. The rise, however, is not perceptible to the traveler. But though level in parts, it is in general relieved by slight undulations. In its extreme western part, in the county of Moore, it attains an elevation of about five hundred feet.

The western boundary may be roughly defined by a line extending from the western part of Warren, through Franklin, Wake, Cumberland, Chatham, Moore, Montgomery and Anson. This line marks what, at an early period of the earth's history, was a line of sea-beach.

Over this whole section the primitive rocks are covered with a deep stratum of earth, principally sand. Along the western border there is a broad belt of unequal width, but generally from thirty to forty miles across, where granite, slate and other rocks are sparingly distributed; they are also found near water-courses in the interior of this section. The belt of primitive rock here mentioned extends to the Wilmington and Weldon Railroad, from the Virginia line to Goldsboro, and from thence to a line drawn through Averagesboro to the South Carolina line about where the Pee Dee enters that State. From the line there indicated to the sea coast not a stone of any size, scarcely a pebble, except at a few points, is to be met with. There is a rock peculiar to this section formed by the combination of the calcareous element of sea shells and the silicious matter of sand. It is full of cavities—the prints of decomposed shells—and is used to some extent as millstones.

A bed of shell limestone underlies this part of the State, cropping out at intervals. It forms a good limestone, sufficiently pure for all the common purposes of building, and in quantity large enough to supply a wide extent of country with quicklime. Examples of this are found nine miles below Waynesboro, in the north-west corner of Jones, in the northern part of Onslow, at Wilmington, and on the north-west branch of the Cape Fear to a distance of forty miles above.

This section is made up of beds of clay and sand with vast quantities of shells imbedded in them. The soil varies in character to the extent that the one or the other predominates; and to the extent that the shells, when intermixed with it, have undergone decomposition. The upland soil is for the most part a sandy loam, easily accessible to the sun's rays, easily worked, and very productive in the crops there cultivated. There are, however, extensive areas of country where sand predominates to such a degree that the surface to a considerable depth is a bed of white sand. Yet this kind of land is the favorite habitat of the long-leaf pine. When cleared, it yields good crops of corn and cotton for a few years without manure, and always with slight help from proper commercial fertilizers. There are other extensive areas where clay enters so largely into the soil as to form a clay loam. The counties on the north side of Albemarle Sound—a very fertile tract of country—are examples of this class. The alluvial lands of this section—lands always in the highest degree productive from the fact that all the elements of fertility are intimately intermingled by having been once suspended in water—are of unusual extent and importance. The

grain grown there supplies food not only for people of other parts of the State, but large populations in other States. There are also extensive areas where the shells of the eocene era of the tertiary formation—and which have been decomposed by time—crop out to the surface and impart to the soil a high degree of fertility. This is the case from the eastern part of Jones county to the Cape Fear. The greater proportion of the good lands in Jones depends upon the fact that this formation is largely developed there. The rich lands of Onslow, and of Rocky Point, in New Hanover, owe their excellence to the same cause. Another class of land in point of fertility equalling any in the world is that reclaimed from some of the lakes of this section. To two of these the process of drainage has been applied—Lake Mattamuskeet and Lake Scuppernong (Phelps). By canals dug from the lake to the nearest stream which afforded the necessary fall a wide margin entirely round the lake has been brought into cultivation. These lands seem to be absolutely inexhaustible. The cultivation of three-quarters of a century has made no change in their productive capacity. To the lands reclaimed from the borders of marshes—so frequent near the sea-shore—the same remark may be strictly applied.

Another class of land remains to be mentioned which will be a resource of inestimable value in time, perhaps not distant. Bordering on the sea and sounds are extensive tracts of country designated as swamps. Though so-called, they differ widely in their characteristic features from an ordinary swamp. They are not alluvial tracts, neither are they subject to overflow. The land covered by many of them lies for the greater part quite low; but this remark seldom applies wholly to any of them—to some does not apply at all. On the contrary many of them occupy the divides or water sheds between the rivers and sounds, and are elevated many feet above the adjacent rivers of which they are the sources. These latter are susceptible of drainage, and when reclaimed have every element of the most exuberant and lasting fertility. Bay River Swamp, between Pamlico and Neuse Rivers, and Green Swamp, in Brunswick and Columbus Counties, may be mentioned as examples. The elevation of the latter is forty feet above the sea level. The work of drainage is simple. From the border of the swamp, which is always the highest land, the bottom slopes in every direction gradually, almost imperceptibly, to the centre. A canal cut through this border into the swamp, and carried to some neighboring stream, lays bare an extensive belt along the entire border. The

aggregate territory in the State known as swamp lands is between three and four thousand square miles. When drainage shall be properly carried out over this great territory—a work which, on account of the slight difficulties to be encountered as compared with those which they encountered and overcame, would be deemed trifling by the laborious North German and the indefatigable Hollander—hundreds of square miles of land of surpassing fertility will be added to the area now in cultivation.

Throughout this entire section cotton, corn, oats, sorghum, peas, potatoes, especially sweet potatoes, are the staple crops; the culture of tobacco has been lately introduced with success. Upon the rich alluvions and the reclaimed lake and swamp lands, corn, with peas planted in the intervals between the corn, forms the exclusive crop. Occasionally on the broad low-grounds of the Roanoke, wheat is grown to a considerable extent. In the counties on the north of Albemarle Sound it is one of the staple crops. On the low-grounds of the lower Cape Fear rice has long been the staple crop, and during recent years its culture has been extended northward along the low lying lands of the rivers and sounds. The upland variety of rice has been introduced within a few years past with entire success. The cultivation of jute also has been the subject of experiment with like success, and it only needs proper encouragement to be grown to any extent. This section is everywhere underlaid with marl—a mixture of carbonate of lime and clay formed by the decomposition of the imbedded shells—sufficient in quantity, when raised and applied to the surface, to bring it to a high pitch of fertility and maintain it so.

The only metallie substances that have been found within this section are some of the ores of iron—the bisulphuret, hydrated oxide, and sulphate, or copperas.

In the counties of Duplin and Sampson valuable deposits of phosphates have been discovered, which are now being mined and ground for fertilizing purposes. They are known to exist in the adjoining counties, but to what extent has not been yet ascertained. From the similarity of the geological conditions throughout the Eastern Section, there is little doubt that a systematic exploration there will lead to further extensive discoveries.

The use of marl, on account of its lower value in comparison with its bulk and consequent cost of transportation, must be mainly, if not wholly, confined to the section in which it is found. Phosphates, on

the other hand, on account of their high fertilizing power, admit of transportation to any distance, and may be used anywhere.

Dr. Emmons remarks: "The swamp soils of North Carolina show a greater capacity for endurance than the prairie soils of Illinois, notwithstanding the annual crops are somewhat less per acre; and, on the score of location, we are unable to see that the Illinois soils have the preference. Nor, as regards health, are our swamp soils more subject to malaria than the country of the prairies." He refers to the remarkable fact that "persons live and labor in swamps with impunity or freedom from disease." This statement is fully sustained by the reports of our engineers who have had charge of the construction of railroads in that section.

The swamps, in their natural state, afford abundant pasturage. They are covered by a dense growth of reeds, which supply excellent food for cattle, winter and summer.

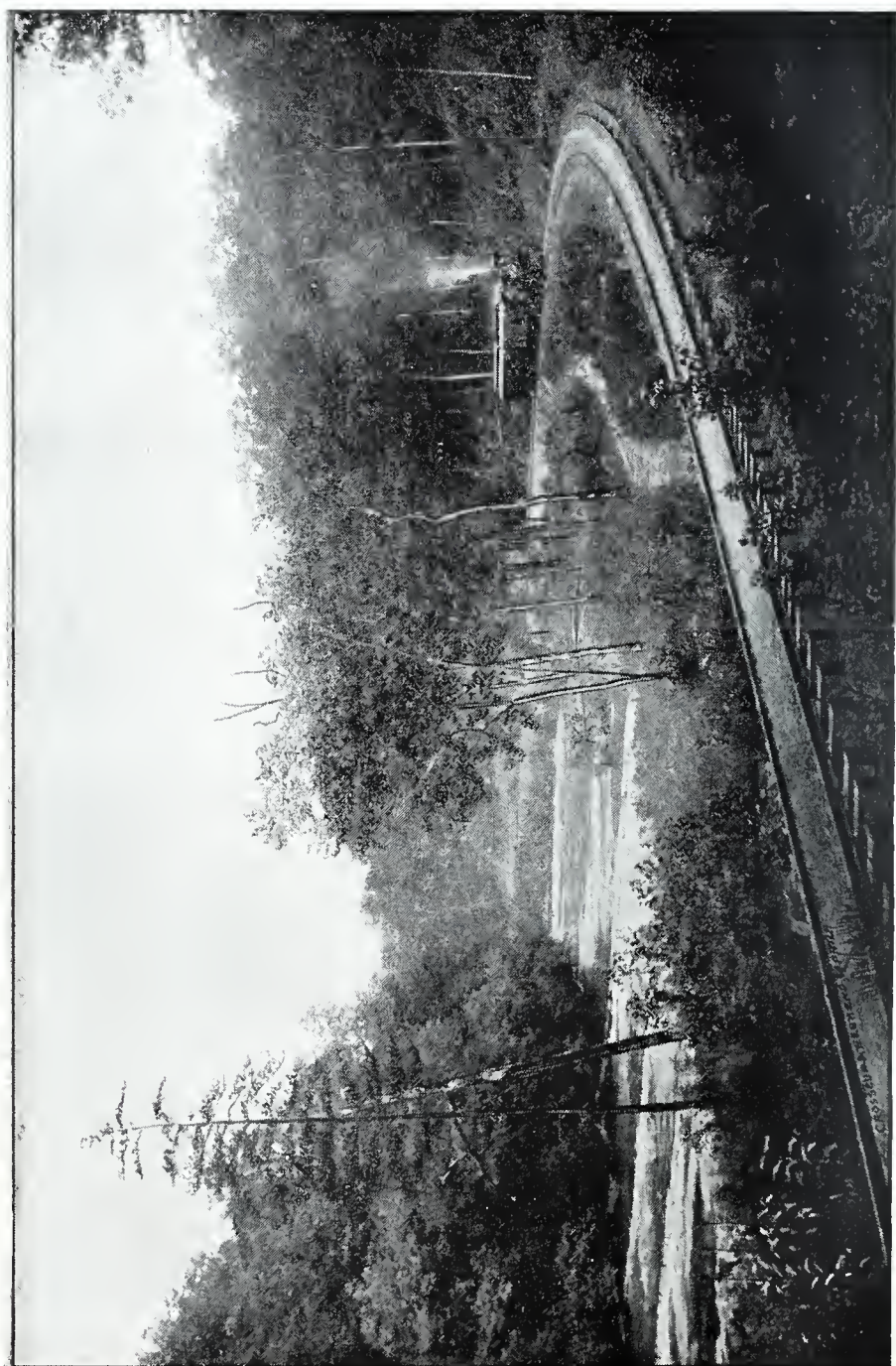
That eminent agriculturist, Mr. Edmund Ruffin, of Virginia, who studied this section of the State with care, expressed a high appreciation of the tidewater region for the cultivation of grasses. He said: "There is no better country for grasses east of the mountains. In small lots I saw dry meadows of orchard grass and clover that would have been deemed good in the best grass districts." It is evident, from the humid character of the climate in that region, and from the fact that the heats of summer are tempered by sea-breezes, owing to the proximity of the ocean, that the conditions are such as to favor the growth of this family of plants.

Among the resources for future use along the seaboard country, peat is entitled to a prominent place. It exists over hundreds of square miles in area, and to the depth of many feet. At no distant day it will be extensively used, both as a fuel and fertilizer.

If the indications of nature are to be relied on, North Carolina was plainly marked out as the land for vineyards. In the sober narrative of the voyage of Amidas and Barlowe, made in 1584, to North Carolina, then an unbroken wilderness, the author tells us: "We viewed the land about us, being, where we first landed, very sandy and low towards the water-side, but so full of grapes as the very beating and surge of the sea overflowed them, of which we found such plenty as well there as in all places else, both on the sand and on the green soil, on the hills as in the plains, as well on every little shrub as also climbing towards the tops of high cedars, that I think in all the world the like abundance

is not to be found; and myself having seen those parts of Europe that most abound, find such difference as were incredible to be written." Upon the visit of the voyagers to the house of the Indian King, on Roanoke Island, wine was set before them by his wife. It is further mentioned that, "while the grape lasteth, they (the Indians) drink wine;" they had not learned the art of preserving it. Harriot, a distinguished man in an age of distinguished men, of whom it was justly said that he cultivated all sciences and excelled in all, visited the same coast in 1586, where he was struck with the abundance of grape vines, and he was impressed with the fact that wine might be made one of the future staples of the State. "Were they," he writes, "planted and husbanded as they ought, a principal commodity of wines might be raised." This State has proved to be far richer in this respect than it is probable even he suspected. Grape vines were found in equal profusion in the original forest throughout the State. They often interlaced the trees to such an extent that they were a serious impediment to the work of clearing away the forest, catching and suspending the trees as they were felled. At this day, if a tract of forest is enclosed, and cattle of every kind excluded, they spring up spontaneously and thickly over the land. Some of the finest wine grapes of the United States, the Scuppernong, the Catawba and the Lincoln, are native to this State. But it was long before the bounty of nature in this regard was improved. This was probably due to the fact that the State was settled almost wholly by emigrants from the British Isles, who knew nothing of the culture of the vine. It was planted here and there to yield grapes for table use; but it was not until within thirty years that a vineyard was known in the State. Within that period several of large and a great number of small extent have been planted. Grapes in season are abundantly supplied for domestic consumption, and shipped in hundreds of tons. The wines of the established vineyards are held in high and just repute.

All the cultivated fruits and berries grow here in great perfection with the exception of the apple. This, though by no means an inferior fruit, is yet not equal in size and flavor to that of the Middle and Western Sections. Among the swamps the cranberry is found in profusion. The melons are of every variety and of peculiar excellence.



VIEW ON ARARAT RIVER, SURRY COUNTY.

RIVERS.

The river system of the State is determined by its peculiar topography. Its rainfall is copious, the fountain of numerous streams in all sections of the State; and, owing to the fact that the rivers in the Middle and Western Sections have their origin among the highest mountains and on the highest table-lands on the eastern side of the American continent, these rivers, in their descent towards the sea, develop an immense amount of mechanical power. Those in the Eastern Section, with equal abundance of rain as a source of water-supply, but with more gentle descent towards the ocean, offer facilities for navigation not possessed by the rivers of the Middle and Western Sections, and towards their mouths expand into wide estuaries, connecting with the sounds and bays which provide the ports and harbors available for exterior commerce, foreign and domestic.

Topographical causes also largely influence the course and direction of these rivers. Those rising west of the Blue Ridge are diverted by that barrier towards the north and north-west and towards the Valley of the Mississippi with ultimate destination to the waters of the Gulf of Mexico. Those rising east or south of the Blue Ridge, or the upper part of the Piedmont Section, after a general direction towards the east, ultimately pass out of the State in the middle portion of the Middle Section, and find their way to the Atlantic Ocean through the State of South Carolina; while those having their sources in the belt on the eastern extension of the Middle Section find an entrance into the tide-waters of the Eastern Division.

The general river system is naturally divided into three subordinate ones entirely distinct from each other. The most characteristic of these is that originating on the plateau of the Blue Ridge, or on its western slope, the superior elevation of the high culminating masses of the great Appalachian chain throwing off the rivers to all the points of the compass. From this culminating height the Tennessee River, with its length of twelve hundred miles, draws its chief supply; and the Ohio, with equal length, from the same source, draws one of its chief upper tributaries. The volume of water poured out from this mountain reservoir is very great. Thus, the most western of them, the Hiwassee, with its tributaries, the Valley and Nottely Rivers, draining two counties, Clay and Cherokee, an area of about 650 square miles, passes into south-eastern Tennessee, a powerful stream with a breadth of one hundred

yards, with a descent, from their sources to the State line, a distance of about 75 miles, of from 800 to 900 feet, providing great and continuous water-power. The Tennessee River, united with the Cheoah, the Nantahala, the Ocono Luftee and the Tuckasegee, all large streams with a width of from 50 to 150 yards, with united volume and resistless power, cuts its way through the Smoky Mountains at the point of their greatest elevation, and constitutes one of the principal branches of the greater Tennessee, which unites with the Ohio a short distance above the junction of that river with the Mississippi. The united drainage of the Tennessee in North Carolina is about 1,500 square miles, with a united length in this State of 300 miles. The fall of each of these, from their sources to the State line, is about 1,000 feet.

The Pigeon River drains a separate area of about 500 miles. It has a course of about 70 miles in North Carolina, with a width of about 80 yards, and a fall, from its upper valleys to the borders of Tennessee, of about 1,000 feet.

The French Broad River is nearly as large as the Tennessee, and is fed by several large affluents, such as Davidson's River, Little River, North River, Swannanoa, Ivy and Laurel, and drains a territory of about 1,400 square miles. The fall from the mouth of Little River, in Transylvania County, to the State of Tennessee, is about 1,000 feet.

The Nolichucky, formed by the union of Caney River and North and South Toe, unites with the French Broad after that stream has entered the State of Tennessee, becoming a broad and deep stream in size little inferior to the river with which it joins its waters. Its drainage is about 600 square miles, and its fall is about 1,500 feet.

Elk and Watauga Rivers are smaller streams, with a course of only twenty miles or more in this State, but chief tributaries of the important Holston River in Tennessee.

The New River, alone of all the rivers of the State, flows north, or north-west, into Virginia, and uniting its waters with those of the Kanawha, empties at length into the Ohio. Its aggregate length in North Carolina is nearly 100 miles, and its fall about 700 feet, and its drainage surface within the State is about 700 square miles. This is one of the larger mountain rivers, of the size of the Hiwassee, Tennessee and French Broad.

Of the characteristic features of these mountain rivers, Prof. W. C. Kerr, former State Geologist, has remarked: "There is a common feature of these streams that is worthy of remark, viz.: that through a

very considerable part of their very tortuous course across the plateau from the Blue Ridge to the Smoky, the amount of their fall per mile is frequently quite small, not greater than that east of the mountains, the greater part of their descent occurring within the gorges through which they force their way across the Smoky chain, so that many of them present navigable channels of considerable extent. The French Broad, for example, has a fall of less than 3 feet to the mile from Brevard to Asheville, a distance by river of 40 miles." And he says: "The dominancy of the western chain of mountains frequently asserts itself in a very striking manner, notwithstanding it is obliged, sooner or later, to give passage to all the streams of the plateau. The French Broad is a striking illustration, as well as North Toe and New River (South Fork), all these being thrown off by the steeper slopes and more rapid torrents from the western escarpments and hurled against the very crests of the Blue Ridge, along which they wander lingeringly in slow and tortuous course, as if anxiously seeking the shorter passage to the sea; but finally turn, as if in desperation, and plunge with roar and foam against the frowning ramparts (of the Smokies) which bar their way to the west."

There is, on the south and a portion of the east slope of the Blue Ridge, another system which has, in the course of its streams, almost direct outlet into Georgia and South Carolina, viz.: the Chatooga and Toxaway, which are the chief head streams of the Savannah River, the upper waters of the Saluda; and the Green and First and Second Broad, which unite to form the Broad River of South Carolina, uniting with the Saluda at Columbia to form the Congaree.

Another and a more important system is that which drains the northern half of the Piedmont Section, and which is represented by the Catawba and Yadkin Rivers. These streams have a general course a little north of east until they leave the plateau, when they turn at right angles to their former direction, and pursue nearly a southerly course, and pass into South Carolina broad and placid streams, the Yadkin then taking the name of the Pee Dee and the Catawba that of the Wateree. Both of these streams receive their chief affluents from the north side, and many of these are large streams. Into the Catawba flow North Fork, Linville, John's River, and many others of less volume; while the Yadkin quickly gains consequence by the admission of Reddy's, Roaring, Elkin, Mitchell's, Fisher's, Ararat and Little Yadkin. The combined drainage of these two great streams is more than 2,500 square miles.

The Yadkin receives in its lower course a larger number of affluents than the parallel stream the Catawba, has a greater fall in its course, and drains a wider and more continuous valley. Both are navigable in their upper courses, interruptions by shoals being infrequent, and which are readily surmounted, works to that effect having been begun nearly three-quarters of a century ago, but never perfected. The course of the Yadkin presents remarkable features of fluctuation in placidity, in width, and in contrast of characteristics, its upper course, almost from its source, having a very slight fall, then interrupted by Bean's Shoals for a mile or more, where it expands to the breadth of 200 yards, then resuming its gentle course, attaining a width of several hundred yards, with its flow interrupted by numerous willow-covered islands, until, as it approaches the gorge formed by the encroachment of the Uwharrie Mountains upon its channel, it suddenly plunges, a bold cataract of 10 or 12 feet, into the head of the Narrows, through which it passes for a distance of 3 miles, compressed into an inconceivably swift torrent of a width of not more than 60 feet and 2 miles or more in length. Emerging from that, it at once expands into a channel of 1,000 yards in breadth, soon loses itself in the herbage of the Grassy Islands, expands, a sea of verdure, to the width of a mile, again emerges, and passes on to the South Carolina line through a channel of several hundred yards in breadth, torn by rocks and interrupted by numerous islands, many of them large enough for profitable tillage.

Another important system is that of the Dan and its tributaries. The Dan is the largest river in the State, measured along its course from its sources in the county of Stokes to its mouth, a distance of more than 300 miles; and is further remarkable as the only river in the State rising in the Blue Ridge and reaching within the State the waters of the Atlantic Ocean. It empties into Albemarle Sound. A large portion of this river is navigable; from its mouth by steamboats up to Weldon, thence past the rapids by canal to the smooth waters above Gaston, thence by canals past other similar obstructions to the borders of Stokes County, in which it has its rise.

There is another important system, having its origin in the Middle Section, discharging its waters into the sounds and bays of North Carolina, and giving to the people of the interior easy access to the sea and to the advantages of exterior commerce. This system includes Tar River, Neuse River, Haw River, Deep River and the Cape Fear

River, which is formed by the junction of the two last-named streams. The Tar River rises in the western part of Granville and among the semi-mountainous hills of Person, flows towards the south-east, drains most of the area of eight counties, embracing about 5,000 square miles. Its fall from its sources to tidewater is upwards of 400 feet. Its greatest water-power is demonstrated near Rocky Mount, for three-quarters of a century the seat of one of the largest cotton factories in the State. It is navigable to Tarboro. At Washington it expands into a broad estuary, navigable for sea-going vessels, and thence takes the name of Pamlico River.

Neuse River has its sources in the highlands of Person and Orange Counties. It becomes navigable for steamboats at Smithfield in Johnston County, all obstructions having been removed to that point. At Newbern it is 2 miles wide, and it is there joined by the Trent River, and the united streams soon widen to a width of 8 miles, emptying at length into Pamlico Sound. It is navigable for vessels drawing 14 feet water as far up as Newbern. Its length is about 200 miles, and it drains an area of about 5,000 miles.

Haw River and Deep River, which unite at Haywood, in Chatham County, to form the Cape Fear River, rise, the first in Rockingham, the other in Guilford County, and are important from the great water-power provided by them, utilized in Alamance and Randolph Counties by numerous cotton-mills, upon which streams there is a greater concentration of manufacturing industry than elsewhere in the State. The Cape Fear River, formed by the junction of these streams, becomes navigable at Fayetteville to Wilmington, a distance by water of 120 miles, giving an interior navigation not equalled by any other river in the State. It became a very important avenue from the earliest settlement of the country for the ingoing and outgoing trade of the interior, and was early made the object of improvement by an incorporated company organized in 1795; thence by the State, which, at different times, spent nearly a million dollars in attempts to improve the upper waters above Fayetteville; and in late years by the General Government, which has taken in charge the maintenance of continuous navigation between Fayetteville and Wilmington. The aggregate length of the Cape Fear and its tributaries is about 500 miles, and its area of drainage not less than 8,000 square miles.

Among the larger tributaries to the Cape Fear River are the Black and North East Rivers, both large, navigable streams.

In the south-east corner of the State are Lumber and Waccamaw Rivers, both bold, navigable streams, entering South Carolina, uniting with the Pee Dee, and emptying into Winyah Bay near Georgetown.

In the North-eastern Section are numerous broad, navigable rivers, draining an area of about 2,500 square miles, and emptying into Albemarle Sound. Of these the Chowan is the largest. It is joined by the Meherrin, the two having a united length of about 100 miles, and giving practicable navigation into Virginia.

The chief of the other streams are Perquimans, Little River, Pasquotank and North River, all navigable, with little fall, and therefore unavailable as water-power.

The Alligator and the Scuppernong are broad, deep but short streams, emerging from the great swamps of Hyde and Tyrrell Counties. They also empty into Albemarle Sound.

Pungo, Bay River, and, between the Neuse and Cape Fear, several other short tidal streams, such as Newport and North River in Carteret County, White Oak River in Jones County, New River in Onslow County, and Lockwood's Folly and Charlotte in Brunswick County, contribute their testimony to the extent of the water area of the coast region, and to the evidences of a bountiful, but not excessive, annual rainfall.

The total aggregate in the length of the rivers in North Carolina—not including innumerable small rivers and creeks—is about 3,300 miles, and their total fall is about 33,000 feet, or an average of 10 feet to the mile.

The total water-power furnished to this State by these streams is estimated at 3,370,000. That furnished by the Roanoke River within the State is 70,000; of the Yadkin 255,000, giving a capacity to turn 10,200,000 spindles; of the Catawba 184,000, with capacity to turn 7,360,000 spindles; for Deep, Haw and Cape Fear Rivers an aggregate of 130,000 horse-power, with power to move 5,200,000 spindles, or a total of 600,000 for the rivers named, and to reach this result actual measurements were taken.

Of remarkable water-powers which merit special notice, that of the lower falls of the Roanoke River, which terminates at Weldon, is the most conspicuous. Of this, Professor Kerr says:

The whole force of this magnificent river, developed by a fall of 100 feet in about 10 miles, could easily be made available by the canal which has its outlet at Weldon. The power of the Merrimac at Lowell is not comparable to this, and it is in the midst

of cotton fields, and yet has never turned a spindle. Another fine water-power is found on the Catawba at Mountain Island, 12 miles from Charlotte, the fall being at least 40 feet, and having the advantages of a similar canal.

The reproach resting upon the Roanoke no longer exists, or is in process of effacement, a wealthy company being now engaged in converting the enormous power and admirable facilities into profitable uses.

Of another remarkable water-power, already referred to in the sketch of the Yadkin River, that of the Narrows, Professor Kerr speaks in particular terms worthy of quotation. He says:

At this point the whole of the immense water-power of this, the largest river in the State, is suddenly compressed into a narrow, rocky gorge of the Uwharrie Mountains, a broad, navigable expanse of more than half a mile in width contracted into a defile of about 60 feet in breadth, through which the torrent dashes with an impetuosity to which the "arrowy" swoop of the Rhine in its most rapid mood is but sluggishness itself. The total descent of the Narrows and the Rapids, in a distance of some two miles, is not less than 50 or 60 feet; at the termination of which, at the confluence of the Uwharrie, the river attains a width of more than one mile.

At the time the above was written, the locality was about 30 miles from the nearest railroad. Now one, recently constructed, is within 10 miles; and as the locality is within, or on the margin, of the cotton zone, such unequalled water-power must fix the attention of the energetic manufacturer.

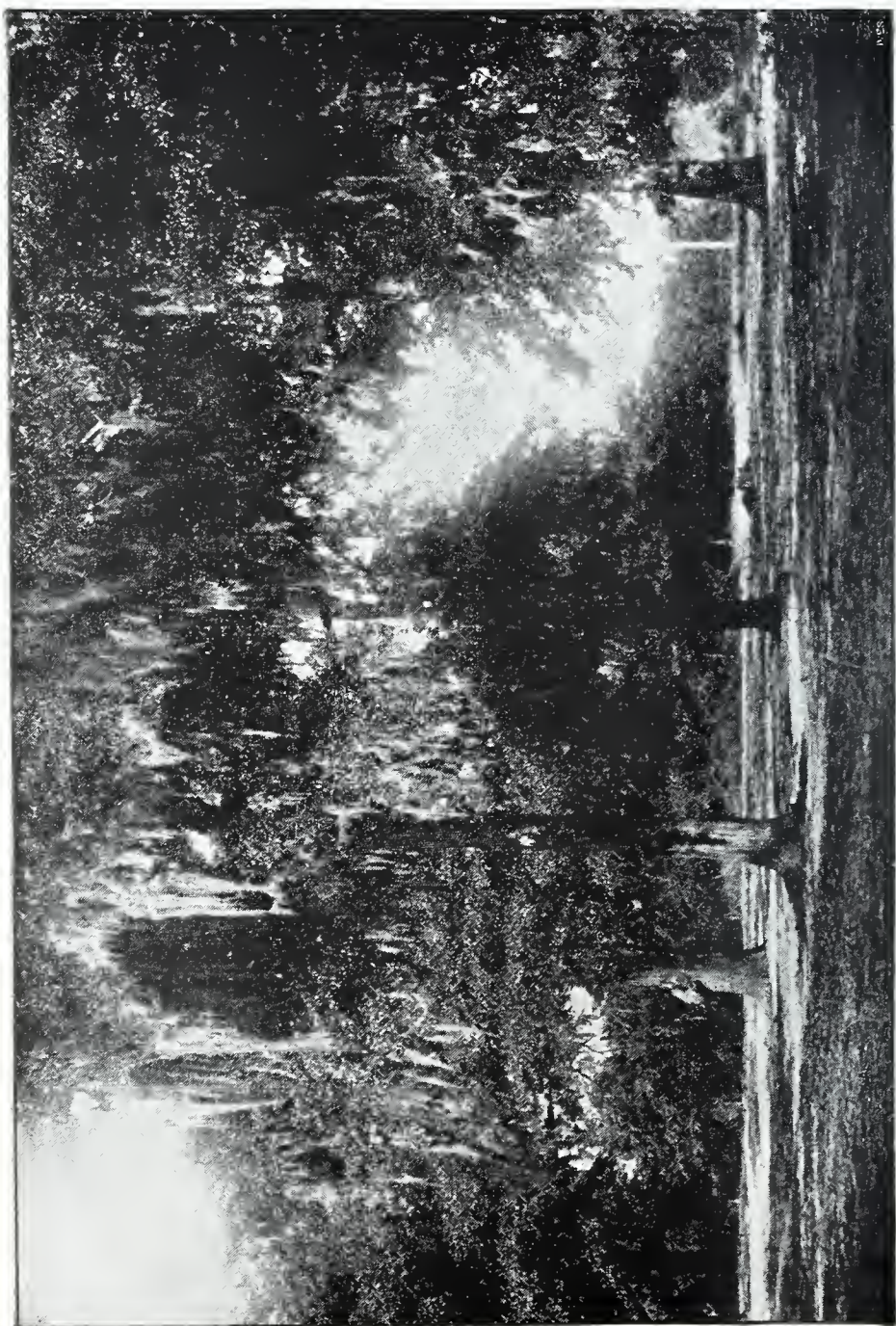
LAKES,

Which are naturally comprised in the water system of the State, compose a very small area in the water surface. They are found only in the Eastern Section, and are comparatively of small size. In the Mountain Section, evidently, in a former geological era, they had filled the areas now occupied by numerous narrow valleys; but the barriers which once confined them long since gave way, and the tumultuous streams which now drain those valleys give no present token of their former languid life. In the Middle Section there are now no lakes, nor any evidence that they had ever existed. They must be looked for in the Eastern Section alone. Here are to be found 15 in all, of various dimensions. The largest is Mattamuskeet, in Hyde County, with an area of nearly 100 miles, with elliptical form, and in dimensions about 15 miles in length and from 5 to 7 in breadth. This, and Lake Phelps, Alligator Lake and Pungo Lake, are all situated in the great swamp between Albemarle and Pamlico Sounds; and all of

them are of smaller area than Mattamuskeet. In the White Oak Swamp, in Jones and Carteret, is a group of small oval lakes, a few miles apart, and united with each other naturally or artificially. The largest of these, North West Lake, has an area of 10 or 12 miles. In the Gum Swamp, in Bladen and Columbus Counties, is the Waccamaw Lake, 8 miles long by 5 broad. These lakes, being situated in the highest part of the swamps in which they lie, have no feeding waters, but most, if not all, of them discharge full and exhaustless streams. They all have sandy bottoms, and a depth of from 8 to 10 feet. Most of them seem to have originated in the ignition during long continued dry weather of the peaty beds which compose the body of the swamps. The aggregate lake surface of the State is estimated at about 200 miles.

SOUNDS AND BAYS.

These have been referred to in the sketch of the Eastern Section, but their extent and commercial and economical value entitle them to more extended notice. The coast of North Carolina, for a distance of nearly 300 miles, is separated from the ocean by a succession of long narrow islands, in width from half a mile to a mile or more, composed largely of pure white sand tossed up by the winds into dunes or hillocks; occasionally there are extensive areas of marsh, covered with coarse grass, wild oats and other vegetation, forming the pasturage of the herds of wild ponies which abound on some of the banks. Through this narrow barrier the sea makes its irruptions to the sounds within, forming the inlets and outlets through which the operations of commerce are conducted. These sounds are of various dimensions, two of them being important inland seas. Of them all, Pamlico and Albemarle Sounds are the most extensive, the former lying parallel with the coast, with a length of about 75 miles and from 15 to 25 miles wide; the other lying east and west, with a length of 60 miles and a breadth of from 5 to 15 miles. These two sounds are connected with each other by Croatan Sound, 4 miles wide and 10 long, and also by the narrower Roanoke Sound. Currituck Sound extends from Albemarle Sound to the waters of Virginia through a shallow channel of 4 or 5 miles wide. By a canal of a few miles in length it forms a connection between the inland waters of North Carolina and those of Virginia, and becomes the avenue for the passage of a very large commerce. These larger sounds, all navigable for vessels drawing from 15



LIVE OAK AND SPANISH MOSS, NEAR WILMINGTON.

to 12 feet water, besides being important for the carriage of a great outward and inward trade, are the localities of the largest and most productive fisheries along the Atlantic coast, abound in oysters and other shell fish, and are the haunts of innumerable wild fowl of the most desirable varieties.

South of Pamlico Sound there is a continuity of narrower and shallower sounds to within a few miles of the mouth of the Cape Fear River, where they are interrupted by a narrow isthmus of sand. These smaller sounds are Core, Bogue, Stump, Topsail, and others. All are connected with the ocean by numerous but somewhat capricious inlets, dependent for their stability upon the condition of the ocean, but in their caprices offering no permanent obstruction to navigation.

This inland water system is connected with the waters of Chesapeake Bay by the Dismal Swamp and Albemarle and Chesapeake Canal, and with the connection of the waters already made through Delaware and New Jersey, can easily be made part of a great interior waterway of inestimable value to the United States in the event of war with foreign nations.

The bays are chiefly enlargements or projections inland of the sounds.

SWAMPS.

Of what are known as Swamp Lands, there is an area of between 3,000 and 5,000 square miles. They lie chiefly in the counties bordering upon the sounds or upon the ocean. They are not alluvial lands or subject to overflow, but are, as a rule, elevated above the adjacent streams of which they are the sources. Some of them are peat swamps, with an accumulation of decayed or decaying vegetation of considerable depth. The value of these lands is indicated by the character of the vegetation upon them. The prevalent growth of the best swamp lands is black gum, cypress, poplar, ash and maple, and also a luxuriant growth of cane. These lands have for many years furnished an abundant supply of timber from the species of trees above mentioned.

The largest area of swamp land is known as the Hyde County Swamp, although it occupies a part of five counties. It has an area of nearly 3,000 square miles. Owing to elevation above the adjacent surface drainage is easy, and large bodies of it have been subdued to cultivation, and are among the finest farming lands in the State, the chief crop being corn. The water, after drainage, is so near the surface as to make these lands independent of drought.

About 100 square miles of the great Dismal Swamp lie within this State. Dover Swamp, between the Neuse and Trent Rivers, has an area of 150 square miles. In its central part it is 60 feet above the sea, and therefore susceptible of easy drainage. But the reclaimed land is of very unequal value. The other principal swamps are Holly Shelter and Angola Bay in Onslow, Duplin and New Hanover Counties, Gum Swamp in Brunswick and Columbus, and White Marsh and Brown Marsh in the same section. All of them abound in valuable timbers, cypress, juniper, poplar, maple, oak, &c., and the industries of shingle-getting, staves and other products of the forest are very actively pursued.

The most productive farms in the State have been reclaimed from the borders of many of these swamps, and have proved practically inexhaustible. Lands in Hyde County, cultivated for a period of one hundred years continuously in corn, without the application of manure, show no apparent loss of fertility. The swamps themselves, and also the country around them, seem conducive rather than prejudicial to health—the timber-getters, engaged in the very depths of mire and water, appearing to be peculiarly exempt from malarial poison, if, in fact, it exists in the swamps.

FORESTS.

The forestry of North Carolina is remarkable for its extent, its variety, the number of its species, and also for its contrasts. For in this State is presented the only instance where the influence of latitude is displaced by that of longitude; where the ascent from the shores of the ocean to the heights of the mountains produces the same effects as are wrought elsewhere by advance from the semi-tropical airs of the South to the frozen regions of the North. Thus, standing near sea-level, where the shores are washed by the tepid waters of the Gulf Stream, we meet the semi-tropical palmetto and the evergreen live-oak congenial to the soil and climate of Florida; thence, advancing to the west, and ascending the summits of mountains, a mile and a quarter above the sea, we encounter the different forms of the fir, the balsam, the hemlock and the white pine, clothing those summits with such dense, sombre, Canadian verdure as to give color to the landscape and names to the mountains. The whole country is thus not only adorned with arboreal forms of great beauty and scientific interest, but with trees of great value in all that conduces to the gratification of human

wants, and a powerful factor in industrial pursuits and in the interchanges of commerce.

The many distinguished botanists who have studied this subject—from Bartram, who made his tour in 1776, the elder Michaux, who visited it in 1787, the younger Michaux, who came in 1802, down to the later botanical explorers, Dr. De Schweinitz, Nuttall, Dr. Gray and Mr. Carey, who explored the higher ranges of our mountains in 1841, and our own Dr. Curtis, whose wide excursions were made at a later period—all agree that on no part of the American continent were trees to be found of such beauty, value and variety as were to be found throughout North Carolina. Many of the trees and shrubs now familiar to European ornamental and economical uses were introduced from this State; among which are the locust (*Robinia pseudacacia*); the tulip tree (*Liriodendron*); the rose locust (*R. Hispida*); the rhododendron in its various forms, the ivy (*Kalmia Latifolia*), and many others, confirming what Dr. Curtis has said, that “in all the elements which render forest scenery attractive, no portion of the United States presents them in happier combination, in greater perfection, or in larger extent than the mountains of North Carolina”; and, he might have added, throughout the whole State; for no portion of it is deficient either in the number and varieties of species, or in the size and value of the trees.

In order to realize the extent to which this richness of forest development is concentrated within the area of this State, it is only necessary to call attention to the distribution of a few kinds which are dominant and characteristic. Of species found in the United States (east of the Rocky Mountains), there are

Oaks.....	22, and 19 in North Carolina.
Pines (trees).....	8, and 8 in North Carolina.
Spruces.....	5, and 4 in North Carolina.
Elms.....	5, and 3 in North Carolina.
Walnuts.....	2, and 2 in North Carolina.
Birches.....	5, and 3 in North Carolina.
Maples.....	5, and 5 in North Carolina.
Hickories.....	8, and 6 in North Carolina.
Magnolias.....	7, and 7 in North Carolina.

And as to the first and most important group of the list, Dr. Curtis has called attention to the very striking fact that there are more species of oaks in this State “than in all of the States north of us, and only one less than in all the Southern States, east of the Mississippi.”

THE PINES, which include all the species found in the United States east of the Rocky Mountains, are the most widely diffused, and the •

most valuable from their numerous uses, in lumber and other products, to which they are applied.

That variety which has the most uses, and which is also the most widely diffused, occupying dense forests—or what were once dense forests—throughout a large portion of the Eastern Section, is the

LONG-LEAF PINE—*P. australis*. Of this tree, Dr. Curtis says:

“The invaluable tree by which the country, and this State especially, have so largely profited, is generally known among us by the name here given, though it sometimes is called yellow pine. In the navy and dockyards of the country it bears the latter name, though this designation there includes also the swamp or rosemary pine, as well as the species first described in this list. It begins to appear in the southeastern part of Virginia, and from thence to Florida it is eminently the tree of the lower districts of the Southern States, occupying nearly all the dry sandy soil for many hundred miles. It is from 60 to 70 feet high, in favorable situations still higher, and 15 to 20 inches in diameter. The leaves are 10 to 15 inches long, on young stocks sometimes much longer, and clustered on the ends of the branches like a broom. The cones are 6 to 8 inches long. The wood contains very little sap. The resinous matter is distributed very uniformly through it, and hence the wood is more durable, stronger, and more compact; which qualities, in addition to its being of fine grain, give it the preference over all our pines. The quality of the wood, however, depends upon the kind of soil in which it is grown, as in a richer mould it is less resinous. This inferior kind is, in some places, distinguished as yellow pine—another case in point, illustrating the vague and indiscriminate application of the popular names of our forest trees. In some soils the wood is of a reddish hue; and this, in the northern dockyards, is denominated red pine, and considered better than the others. I am informed that trees which have a small top indicate a stock with the best heart-wood.

“The great value of this tree in both civil and naval architecture is too well known to justify a full enumeration of its uses, and statistics of trade in it belong rather to a gazetteer than to an essay like this. But it is not the wood only that gives value to this tree. The resinous matter, in various forms, is shipped from our ports in large quantities to all parts of the United States and to foreign countries. Turpentine is the sap in its natural state as it flows from the tree. When it hardens upon the trunk, and is gotten off by proper implements, it is called scrapings, of very inferior value to the virgin article. Tar is made by

burning the dead limbs and wood in kilns. Pitch is tar reduced about one-half by evaporation. Spirits of turpentine is obtained by distillation from turpentine, including scrapings. Rosin is the residuum left by distillation. The greater part of these articles in the markets is derived, I believe, from this State."

The supply of this valuable tree is steadily diminishing, as proved by the diminution of the receipts at the ports from which its products are exported.

For a hundred and fifty years the pine forests had been the chief reliance of the people in whose section the long-leaf pine abounded to such extent as have been characteristic in national familiar nomenclature. For a greater part of that long period only that was used which was conveniently accessible, and the products readily transported to the markets; and, until within the past forty years, little apparent encroachment had been made upon the seemingly inexhaustible store. Since that period, railroads have penetrated all parts of the country, steam saw-mills have displaced the old water-mills, and when they had exhausted the supply readily attainable, tram-roads have been built, connecting with the railroads, the steam mills transported to fresh territory, and thus the work of consumption and actual denudation has been carried on to such extent as to perplex and concern the patriot and statesman as to the measures to be taken to stop the waste, or find a substitute for the destroyed forests.

The WHITE PINE, the great timber tree of the North and Northwest, is found somewhat sparingly in our Mountain Section, but is inaccessible to market and is little used.

The YELLOW PINE—*Pinus mitis*—is known most generally as short-leaved pine, or spruce pine, and is found from the coast to the mountains. It is from 40 to 60 feet high, with a circumference of from 4 to 6 feet. The timber is extensively used for house and ship-building, though less valued for these purposes than the long-leaf.

The JERSEY PINE, the PRICKLY PINE and the PITCH PINE are less valuable varieties; the second of these common in the Piedmont and Mountain Sections, and to some extent in the rough hilly country in the northern part of Durham County and the southern part of Person County.

The POND and the OLD-FIELD PINE are also common and little valued varieties.

The SLASH or ROSEMARY PINE grows only on low, moist land, and is somewhat sparingly diffused. It is the principal and largest timber

pine on the low, flat but firm lands bordering on Albemarle Sound, and also farther south. In the rich swampy lands on Roanoke River it is the giant of the forest, towering many feet above the surrounding trees. It is to be lamented that this fine tree is becoming rare; but the attraction to its height and diameter was irresistible and must lead to its rapid extirpation. Some of these trees were 5 feet in diameter, and attained a height of from 150 to 170 feet.

The CYPRESS—*Taxodium distichum*—is found exclusively in the Eastern Section, growing in swamps, frequently rising out of the water, in which location it appears surrounded by its singular grouping of "cypress knees," rising in sharp, naked cones to the height of from 1 to 3 feet, and awaking curious speculation as to their uses in the economy of the growth of the parent tree. The height of the cypress tree is from 60 to 100 feet, with a circumference above its swollen base of from 20 to 35 feet. The wood is strong and elastic, fine-grained, with little rosin, but very fragrant. It is little affected by heat or moisture, and is very durable. It is deciduous. It is largely used for shingles and wooden-ware, and often for the frame and woodwork of houses.

A tree similar in its uses to the cypress is the WHITE CEDAR—*Cupressus thyoides*—known generally, though improperly in its botanical relation, as juniper. In this State it is found in the Eastern Section exclusively, and is confined to swamps. It is an evergreen, with rich foliage and strikingly picturesque form, and is from 70 to 80 feet high, with a diameter of from 2 to 3 feet. The wood is fine-grained, light, easily worked, fragrant, and in color of a light, rosy pink. It is used in the making of shingles, which are preferred above all others for their freedom from splitting and their durability. They are largely used in the manufacture of churns and pails, and are the chief stock used by the recently established bucket factories in the State.

Somewhat similar to the juniper is the HEMLOCK SPRUCE—*Abies Canadensis*—known in our mountains almost universally as spruce pine. It is confined to the mountains, and found on the margins of torrents, or diffused, somewhat thickly, through the cold swamps. The younger trees possess much beauty in light-spreading spray, feathery foliage and lively color, and as ornamental trees are unsurpassed in charm. But in the older trees the limbs are short and few, and the foliage is confined to the upper extremities, though still a tree of savage picturesqueness. The height often attained is from 80 to 90 feet, with a diameter of from 3 to 6 feet. The timber is light and somewhat

porous, but is often used in the interior work of buildings. Its bark is valuable in tanning, but the forests of the spruce pine or hemlock are not of sufficient density in this State to rival other and more prolific sources of the supply of tan-bark.

The BALSAM FIR—*Abies Fraseri*—is one of those semi-Arctic trees which testify equally to high latitude or to great altitude of locality; for it is found only on mountains whose elevation exceeds 5,000 feet, and seldom forms a forest at a less elevation than 6,000 feet. On the Black Mountains, the peaks of which all exceed this latter elevation, it covers the ground to the exclusion of all other forest trees, and its sombre hue gives a name to that stately group. It is found on the highest summits of the Balsam Mountains, between the counties of Jackson and Haywood, and gives that range its characteristic name. It is found also on the high summits of the Smoky Mountains, there intermingled with deciduous trees; and also there attaining, in this State, its greatest size, being from 75 to 100 feet in height and 2 feet in diameter, while elsewhere the height is not more than 50 feet and the diameter 18 to 20 inches. The wood is white, soft and easily worked, yet little used because of its inaccessibility. From the smooth bark of this species issues a clear thin liquid, known as balsam, of an acrid taste, used as an ointment on cuts and sores, and also as an internal remedy in pulmonary and kidney troubles. It is found in small thin blisters which appear on the bark of the tree from top to bottom, and from each of which is obtained about half a teaspoonful of the liquid by the tedious process of perforating each blister with a small horn or metal scoop.

The tree has a close pyramidal top, and is densely covered with plumes of flat narrow leaves, green above and white beneath, and very attractive in their light feathery forms and disposition.

Another variety, the BLACK SPRUCE—*A. nigra*—is found intermingled with *A. Fraseri*, of similar form, but of smaller dimensions. Its bark is somewhat rough, and it exudes no balsam. The wood is strong, light and elastic, and is much used at the North and abroad for yards and topmasts of vessels; in the future, perhaps, to find the same uses in this State.

The trees last named are peculiar to the Mountain Section. All the others to be specified are diffused throughout the State, common in greater or less degree to all the sections, and will be mentioned without reference to special section or locality, with the exception of the

LIVE OAK—*Quercus virens*—and that, not because of its abundance, but as illustrating the extremes of the climate of North Carolina, which permits the growth and perfection within its territory of a tree appropriate in its habits to the soil and climate of warmer and more genial Florida. This tree is found on the coast from the vicinity of Southport, at the mouth of the Cape Fear River, as far as the northern coast limits of this State, flourishing vigorously in the sandy loam and drawing vigor from the exhilarating breath of the adjacent ocean. It is a tree of spreading habit, the branches extended low over the ground, the small evergreen leaves forming a dense impenetrable shade, and presenting a mass of foliage of striking beauty. The tree attains the height of from 40 to 50 feet and a diameter of trunk from 1 to 2 feet. The timber is closer-grained and more durable than that of any other species of oak, and, before naval construction had adopted iron and steel as its principal material, was above all others valued for ship-building. It does not so abound on our coast as to have given inducement to its use; and the forests, or rather groves or specimens we have, may long remain as happy testimonials to the wide and happy range of North Carolina climatic conditions.

Of the other oaks it may be said that North Carolina contains more species than in all the States north of it, and only one less than in all the Southern States east of the Mississippi.

Of these, the **WHITE OAK**—*Q. alba*—is one of the most widely diffused, one of the greatest in size, the most pleasing in appearance, and one of the most useful in its application. It is found from the coast to the mountains; on the coast, or in the Eastern Section, found in or on the borders of swamps, but in the other sections diffused promiscuously through the forest. It is characterized by a straight trunk, compact and rounded head, light, pleasing foliage, and clean, light-colored bark. Its height is from 70 to 90 feet, with a diameter of from 4 to 5 feet, which, however, is not common, except on the borders of streams, or in the Mountain Section. The uses of this variety are so many that it is universally recognized as the most valuable of its species, being used for house frames, mills and dams, vehicles, agricultural implements, cooper's ware, ship-building, and for all purposes where strength, durability and elasticity are required. Its bark is highly valuable in tanning, where light color in leather is sought to be attained.

The **SWAMP CHESTNUT OAK**—*Q. Prinus*—and the **SWAMP WHITE OAK**—*Q. discolor*—are slight variations of a tree similar in size and



FOREST SCENE, VALLEY OF THE LINVILLE.

uses. They grow to the height of from 80 to 90 feet with corresponding diameter, with timber of great strength and durability, and a foliage of pleasing, graceful character, the leaves being 6 to 8 inches long, with coarse rounded teeth on the edges, with a soft ashy-green tint which contrasts them with the usual vivid green of the *quercus* family.

The POST OAK—*Q. obtusiloba*—is a tree of wide diffusion, having general similarity to the white oak, but is a smaller tree, with a height rarely exceeding 50 feet and diameter of 18 inches. It has a fine grain, great strength and elasticity, is largely used for fence posts, is highly valued by wheelwrights, coopers and ship-builders; and, with the white oak, supplies materials for liquor casks without a superior.

The oaks which appear to have the widest distribution through the State are those carelessly or erroneously classed as red oaks, but with such points of difference as, in many sections, often in the same section, to command different names. Among these is the

SPANISH OAK—*Q. Falcata*—also known as the red oak, sometimes the turkey oak, from a fancied resemblance of its leaves, with its three divisions, to the track of the turkey. This is one of the most common forest trees from the coast to the mountains, and is of a height of from 60 to 80 feet with a diameter of from 4 to 5 feet. The outer bark is dark-colored, and the wood is reddish and coarse-grained. The wood is not very durable, and little used in building or the mechanical arts, but the bark is highly valued for its excellent qualities in tanning.

The BLACK OAK—*Q. Tinctoria*—of the same family, differs from the preceding in having a deeply furrowed dark bark, and the leaves, which are cut into several divisions, from 5 to 7, and also from the number of small glands which roughen the surface in the spring and part of the summer. This tree attains a height of from 80 to 90 feet, with a diameter of 4 to 5 feet. The wood is reddish and coarse-grained, but is stronger than others of its family, and, as a building material, is often used as a substitute for white oak. It is largely used in making staves. The bark is rich in tannin, largely used in tanning, and is also the material from which is obtained the *quercitron* of commerce, so largely used for dyeing purposes.

The SCARLET OAK—*Q. coccinea*—of the same family, is similar to the above, the chief external difference being in leaf, which is more deeply cut, smooth on both sides, of a brighter green, and turning bright scarlet after frost. The wood is not durable, and the bark is inferior for tanning.

The other principal variety of oaks is the WILLOW OAK—*Q. Phellos*—remarkable for the narrowness of its leaves and its pleasing

form; it grows in favorable cool moist situations to the height of from 50 to 60 feet, with a diameter of 2 feet or more. Its wood is coarse-grained, and has small economic value.

The LAUREL OAK—*Q. laurifolia*—resembles the above in general characteristics. Its leaves are broader. This is the shade tree of Wilmington and other eastern towns.

The SHINGLE OAK—*Q. imbricaria*—much resembles the preceding, but is a western or transmontane tree, not being found east of Burke or Wilkes. It is 40 or 50 feet high, 12 to 15 inches in diameter, with low spreading branches, casting a deep shade. The wood is hard and heavy.

The UPLAND WILLOW OAK—*Q. cinerea*—is found only in the sand barrens of the Eastern Section, and attains the height of only about 20 feet, with proportionate diameter.

The WATER OAK—*Q. aquatica*—is abundant in the Eastern and parts of the Middle Section, and has little value.

The BLACK JACK—*Q. nigra*—is a small and rather unsightly tree, with broad, dense leaves and limbs often hanging to the ground. It has little value except for fuel, in which capacity it is unexcelled.

Besides these there is the CHESTNUT OAK, a tree of majestic size and beautiful foliage almost identical with that of the true chestnut, but so sparingly distributed as to have had few tests of its value; the

ROCK CHESTNUT OAK, found only on rocky hills and knolls, and is a handsome tree from the luxuriance of its foliage. Like the other, it has limited distribution, and is little used, though its bark is among the best for tanning purposes. Elsewhere it is used for certain purposes in ship-building.

THE HICKORY, which is peculiar to North America, is represented in this State by six, perhaps seven, out of the nine species found on this continent. The general qualities of all of them are alike. For use in the mechanical arts, and domestic uses, the hickory family is universally valued; and some of the varieties are esteemed for their rich and flavored nuts.

For weight, strength, and tenacity of fibre, we have no wood superior; but its value is impaired by a tendency to rapid decay on exposure, and its peculiar liability to injury from worms. Hence it cannot be used in buildings. But the wood of the different species is indiscriminately used for axle-trees, axe-handles, carpenters' tools, screws, cogs of mill-wheels, the frames of chairs, whip-handles, musket stocks, rake teeth, flails, etc., etc. For hoops we have nothing equal to it. These are made from young stocks. For fuel, there is no wood which gives such intense heat and heavy long-lived coals. For this use, although discrimination is seldom made, the common hickory is said to be the best, and the bitter-nut hickory the poorest. For timber, shell-bark and pig-nut hickories are reputed the best.

The varieties are

SHELL-BARK HICKORY—*Carya alba*—nearly absent from the Eastern Section, and abundant nowhere. It grows to the height of 60 or 80 feet, with small diameter. The tree is valuable for its white, thin-shelled, well-flavored nuts, surpassed only by those of the pecan of the same family.

The **THICK SHELL-BARK HICKORY**—*C. sulcata*—is a rare tree, found, however, in Orange County, and resembles the above, except in the quality of the nut, which is harder and of less sweetness.

COMMON HICKORY—*C. tomentosa*—common everywhere in the State, is the largest and the most valued of the whole family. It exceeds 60 feet in height, with a diameter of about 20 inches.

The **PIG-NUT HICKORY**—*C. glabra*—is only thinly disseminated. It is about 80 feet high.

The **SMALL-NUT HICKORY** and the **BITTER-NUT HICKORY** close the list of this family.

THE WALNUT is found of only two species in this State. The most common, the

BLACK WALNUT—*Juglans nigra*—is not found in the Eastern Section, but occurs in comparative abundance in the Middle and Western Sections. In the Western it attains great size, especially along the base of the Smoky Mountains, where a diameter of 7 feet is sometimes attained. It occurs singly, and is never grouped in large bodies. It is sought for eagerly for cabinet work. The wood is of a dark-brown color, strong and tenacious, with fine grain, frequently curled, and takes a fine polish, and is largely used for the interior finish of dwellings. The foliage is handsome, and it makes a fine shade tree. The leaves are highly aromatic, and the nut, which is of annual abundance, is rich and sweet. The thick husk of the nuts is used in dyeing woollens.

The **WHITE WALNUT**—*Juglans alba*—is the butternut of the Northern States. It is found in this State only among the mountains, and there found only upon bottom lands and river banks. It is a smaller tree than the black walnut, with smooth whitish bark and leaves of lively verdure. The wood is valuable, though the tree is comparatively rare and little use is made of it.

THE CHESTNUT, found somewhat sparingly as far east as the counties of Randolph and Guilford, appears in the greatest abundance and attains its most majestic dimensions on the sides of the high mountains of the Western Section, and on the tops where the elevation does not much exceed 4,000 feet. In such locations its height is often 100 feet and its diameter from 6 to 9 feet. Its wood is light, strong, elastic and

durable, largely used in making rails for fences, which last for half a century. It is also used for making boxes, and has come into use as an ornamental wood both in household furniture and in the interior woodwork of houses, its color being very agreeable, and the veining being quite beautiful.

The CHINQUAPIN is a dwarf variety in the South, found all over this State. It is usually a shrub from 6 to 12 feet high, branching thickly from the ground, and bearing profusely a small edible nut enclosed in a prickly burr similar to that of the chestnut. In frequent localities it assumes the form and dimensions of a tree, some specimens attaining a height of from 30 to 40 feet, with a diameter of from 15 to 20 inches.

THE BEECH is represented in this State by only one species—*Fagus ferruginea*—and is a very handsome tree, with its smooth, mottled gray bark and its shapely leaves, which, even in the winter time, and, changed by the frost to a delicate fawn-color, cling all through the winter to the boughs and retain a delicate and very attractive beauty. The tree is found rather sparingly in the Eastern Section, though fine specimens are found in the county of Pasquotank. In the Middle Section it is more abundant. In the Western Section it is abundant, and there reaches its greatest dimensions, being from 80 to 100 feet in height, with a diameter of from 2 to 4 feet. The wood is white, compact and tough, of uniform texture, and extensively used for plane stocks, shoe lasts and the handles of tools.

THE BUCKEYE.—This tree greatly resembles the horse chestnut, an ornamental tree introduced from Asia, but scarcely more beautiful or desirable than its American cousin, which has not been thought worthy to be introduced into parks or pleasure grounds. There are two varieties in this State, one of which—*Esculus flava*—is found among the high mountains of the Western Section, and there attains a great size. It is there a straight, tall and very handsome tree, with a trunk unobstructed by limbs or foliage for a great distance upward. It is often from 80 to 100 feet high, with a diameter of from 3 to 5 feet. It loves a deep fertile soil. Its foliage is of a rich deep green, and in the spring it is covered with clusters of large, showy, yellowish flowers, similar to those of the horse chestnut. Its wood is heavy but porous, and is little esteemed.

The RED BUCKEYE—*E. Pavia*—is the variety common to the Middle and Eastern Sections, found growing chiefly on the rich margins of streams. It has clusters of dull reddish flowers, and except that it is a mere shrub, from 10 to 12 feet high, it closely resembles the giant buckeye of the mountains.

THE LOCUST—*Robinia Pseudacacia* and the *R. Viscosa*—are the chief representatives of this family in North Carolina. The first is the larger tree, attaining a height of 60 feet or more, and is found in its wild state among the mountains. The wood is hard and compact and takes a high polish. It is largely used in ship-building for trunnels, which, instead of decaying, grow harder with age. These are exported in large quantities from Western North Carolina. The wood is used by turners as a substitute for *box* in the manufacture of bowls, salad spoons, &c. The foliage is airy and graceful, of a translucent green, and the profuse clusters of drooping white and fragrant flowers entitle it to the favor it has gained as an ornamental tree.

The ROSE LOCUST is a shrub only, with foliage similar to the preceding, and flowers of the same form, but of a deep rose color. This is found in all the sections, though that in the Eastern Section is much dwarfed.

The HONEY LOCUST is distinguished by its thin foliage, its thorny branches and its worthless wood, but tolerated for the profusion of its long honey-bearing pods, much used in making beer, and not unpalatable as a fruit.

The CATALPA is a valuable and handsome tree, of great beauty of foliage and flower, and is found sparingly in its wild state in some of the counties west of the Blue Ridge. It is widely distributed as an ornamental tree, and, as the timber is almost imperishable, might be cultivated to advantage for certain uses.

MAPLE.—There are five varieties of this valuable tree.

The RED MAPLE—*Acer rubrum*—is found in all the sections, and everywhere welcomed as the harbinger of spring with its early blooming, bright, scarlet-winged flowers, and equally admired in the autumn when touched by the frost, and its leaves blaze with the splendors of its crimson hues. This tree grows to the height of 40 or 50 feet, with a diameter of 2 or 3 feet. The wood is of close fine grain and takes a high polish. Its many uses are well known. The CURLY MAPLE is not a distinct variety, but is the wood of the same tree where the grain of the wood has a winding direction.

The WHITE or SILVER MAPLE is found only in the mountains, and is of smaller size. It is desirable as an ornamental tree from its spreading habit and from the beauty of the leaves, green above and white beneath. The sap of this tree produces a finer sugar than that obtained from the sugar maple, but in far less quantity.

The SUGAR MAPLE—*A. saccharinum*—occurs abundantly in the Mountain Section and sparingly in the other sections. It is a large

and very handsome tree, with a fine close-grained wood, but from its high value as the producer of sugar it is not much used for other purposes. This tree has a curled variety like the red maple, and also another and more precious than the curled maple, known as the bird's eye, well known in ornamental wood-work.

The other varieties of maple are small, and rank only a little higher than shrubs.

THE ASH is found in several varieties, all of which have the distinguishing qualities of strength and elasticity, furnishing one of the most valuable timbers to be found in the State. These varieties are

WATER ASH—*Fraxinus Platycarpa*—found only along the marshy bottoms of streams in the Eastern Section.

GREEN ASH—*F. Viridis*—found along the banks of streams in the Middle and Western Sections. The tree is of moderate size.

RED ASH—*F. Pubescens*—somewhat rare, found chiefly in the Middle Section, attaining a height of from 50 to 60 feet. The wood is redder than that of the white ash, harder and less elastic, but used for the same purpose; and

WHITE ASH—*F. Americana*—found in all the sections, nowhere abundantly, thriving best along streams and the borders of low grounds. It is from 50 to 80 feet high with a diameter of 2 or 3 feet, with straight stem and gray furrowed bark. The wood is strong and elastic, and is largely used by carriage-makers, wheelwrights and others, and is highly prized by those who use it.

THE ELMS are found throughout the whole State, and need no description. The largest and most valued is *Ulmus Americana*, prized for its beauty as a shade tree, but its wood has not much value.

SMALL-LEAVED ELM—*U. Alata*.—It has no beauty nor large dimensions, but its wood is tough, compact and fine-grained, and is valued by wheelwrights for the making of naves.

SLIPPERY ELM—*U. Fulva*—found in all the sections but most abundantly in the Middle. It is from 50 to 60 feet high. The wood is coarser than that of the other species of elm but is stronger, and is of the highest value in making ship's blocks. Its inner bark furnishes a mucilaginous preparation much used in colds and bronchial affections and for emollient plasters.

WILD CHERRY—*Prunus scrotina*—is found all over the State, but dwarfed in the Eastern and Middle Sections. Among the mountains, on rich and cool declivities, it assumes a different appearance. Its trunk, no longer crooked and distorted, erects itself to the height of from 70 to 100 feet, straight as an arrow, and without a limb for three-

fourths of its height above the ground; the diameter is from 3 to 5 feet. The wood is of a light red tint, compact and close-grained, and little apt to warp or shrink. It is highly valued for cabinet work, being equal to some of the most highly prized foreign woods, and since the mountain forests have been made accessible by the construction of railroads, the demand for cherry timber has greatly increased. When found at all it is abundant, the chief component of large forests.

THE GUMS are useful trees, most common in the swampy lands of the Eastern Section, but some of the varieties are found in the other sections.

BLACK GUM—*Nyssa aquatica*—from 30 to 40 feet high and 12 to 20 inches in diameter, is found in the swamps of the lower Middle and Eastern Sections. The wood has its fibres so interlaced as to make it difficult to split, and is therefore largely used for hubs of wheels, hat-makers' blocks and other uses requiring great toughness.

TUPELO GUM—*N. multiflora*—grows mostly in the moist rich uplands, and is a larger tree than the preceding, attaining a height of 60 feet and a diameter of 2 feet. Its wood is similar in quality to that of the above, and in addition to the uses mentioned are now largely used by the manufacturers of wooden plates, berry baskets, &c

COTTON GUM—*N. auriflora*—is confined to the deep swamps of the Eastern Section, and is a larger tree than the preceding. Its wood is similar to those in toughness, but is much lighter and is easily worked, being manufactured into light bowls and trays. The roots furnish a substitute for cork as floats to buoy up seines.

SWEET GUM—*Liquid amber*—is of a different species from the preceding. It is found all over the State. It is from 40 to 70 feet high, and 2 to 3 feet in diameter. The wood is reddish, compact, fine-grained, and takes a high polish, and is applicable wherever toughness and solidity are required. Its beauty, when dressed, commends itself to the favor of the furniture maker. The beautiful star-shaped leaves, and the fine shape of the masses of foliage, make the tree very desirable as an addition to ornamental planting. The leaves have an aromatic fragrance, and the bark exudes an aromatic, transparent gum, very grateful to the taste, and of medicinal virtues.

TULIP TREE, OR POPLAR—*Liriodendron Tulipifera*—is unsurpassed, perhaps unequalled, by any other tree in the American forest. Majestic in size, graceful in form, the proportions of the giant clad in the vestments of a queen; mighty trunk and stalwart limbs softened into gentleness by a foliage dense, beautiful and singularly unique, and adorned with a profusion of yellow tulip-shaped flowers—Hercules masquerading in the graceful drapery of Omphale—a combination of size, strength, grace and delicacy presented by no other tree of the forest.

The tulip is found in all parts of the State, less common and of less size in the Eastern Section than elsewhere. In the Middle Section it grows abundantly and attains great size. But it most abounds in the Mountain Section, and there it attains its greatest height and largest diameter. Trees of 100 feet high and 6 feet in diameter are common, and instances of 8, 9 and 10 feet are well known. Near Clyde, on Pigeon River, in Haywood County, close by the track of the Western North Carolina Railroad, stands a church, the materials for the construction of which were drawn from a single tree of this species. The church is 50 feet long by 30 in width; all the timbers—the framing, the flooring, the roofing, the steeple, and also the shingles—were provided by one mammoth tree, the diameter of which was 10 feet.

The wood, white or yellow, according to the character of the soil, moist or dry, is yellow in the first and white in the other, and is largely used for building material, for coach paneling and other uses requiring lightness, strength and durability. The exportation from the Mountain Section to the Northern States and to Europe, in logs or sawed timber or lumber, has attained very large proportions.

Very many other trees, from their abundance, size and value, might be added to the above. But it is deemed sufficient to give such as are described as just illustrations of the magnitude of the forest wealth of North Carolina.

Of the others it need only be said in addition, that of the magnolia there are 7 varieties, including *grandiflora*, and the cucumber tree; of the poplars 3; of the birch 3, including, in the Western Section, the black birch or mountain mahogany, a large tree, with highly valuable ornamental wood; of the linn or lime 4, besides sycamore, hackberry, persimmon, mulberry, holly, dogwood, sassafras, and others valuable, all of them, in the mechanical arts.

Of the shrubbery which falls below the dignity of trees there is infinite variety; and there is infinite variety in form, foliage and flower. Among these is the *Stuartia Virginica*, found in the Eastern Section, the only representative on this continent of the Camellia family or the tea plant; of graceful form and foliage, with large, pearly-white translucent flowers, silky on the outside, covered within with a circle of stamens and bright purple filaments and blue anthers; a very beautiful plant, worthy of cultivation, yet unknown beyond its native habitat, and without a popular name.

The SNOW DROP TREE—*Halesia tetraptera*—is found sparingly in the western part of the Middle Section, and abundantly among the mountains along the water-courses. In some places it attains the dimensions



RHODODENDRON AND AZALEA

of a tree; its foliage closely resembles that of the ox-heart cherry. Its branches are thickly hung with white or pink bell-shaped flowers, in size and shape similar to the snow drop of the gardens. It appears to be unknown to cultivation, but is eminently deserving of consideration.

Of the RHODODENDRON, or LAUREL, there are four varieties, including the splendid rose-colored *Catawbiense*. It grows most luxuriantly among the mountains in cool sequestered shades, covering large tracts with impenetrable "laurel thickets," the retreat of wild animals, and the barrier to the hunter. The laurel is found sparingly east of the mountains, small groups of it being found on the rocky banks of Morgan's Creek, near Chapel Hill, and on the shaded north side of the Oconeechee Mountains near Hillsboro.

The IVY—*Kalmia latifolia*—often called calico bush, conspicuous for the profusion of its white or pink angular bell-shaped and delicately dotted flowers, covers many parts of the mountains with dense thickets, and is frequent in the Middle and parts of the Eastern Section as far as Fayetteville, growing on the steep banks of streams with a northern exposure.

The WICKY, a smaller variety of the ivy, is found in the Eastern District in the small pine-barren swamps. The plant is more erect than the ivy, less dense, but the flowers are similar, though more deeply tinted.

The AZALEA presents several varieties, among which are the orange and lemon colored, peculiar to the mountains, growing in large dense clusters, and adding singular beauty to the landscape from the conspicuous glow of its masses of bloom. There is also a white variety peculiar to the mountains, in its growth clinging close to the water-side, and of great and delicious fragrance. In all sections the pink azalea, or honeysuckle, abounds, and in the Eastern Section, among the pine barrens, is found the white or clammy honeysuckle, of questionable fragrance and undecided beauty.

The FRINGE TREE—*Chionanthus Virginica*—often called old man's beard, draped with plumes of snow-white, fringe-like flowers; the white and snowy hydrangea, the syringa, the mock orange, with flowers on loose nodding racemes, white and very fragrant, in size and form much resembling the blossom of the orange; the strawberry bush (*Euonymus Americana*), with its long slender green branches, long pointed leaves, and the fruit—its chief beauty—of a bright crimson color, with rough warty surface, exposing, when mature, bright scarlet seeds, before bursting resembling a ripe strawberry; the sweet shrub (*Calicanthus floridus*), common in the Middle and Western Sections,

admired for the vinous or fruity odor of its chocolate-colored flowers; and the wax myrtle of the Eastern Section with fragrant leaves—all these are some of the many plants which adorn the floral wealth of all parts of North Carolina, and make its sections so rich a field for the research of the botanist or the pleasure of the amateur.

Among the rare vegetable products peculiar to North Carolina, and in it restricted to narrow limitations, is Venus' Fly Trap (*Dionæa muscipula*), found only in marshy places near the mouth of the Cape Fear River, a flesh eater, catching the living fly, and deriving its chief nutriment from the body of the insect; and the *Shortia*, found in a very small space in Alexander County, remarkable as the surviving member of a prehistoric flora, and found elsewhere only in Japan.

CLIMATE OF NORTH CAROLINA.

It will be conceded without question that the influence of climate on human progress is supreme, because, in its happy or adverse conditions, are involved all that relates to comfort, health, energy and success in the occupations which enlist human effort. The regions that most abound in fertile soil, exuberant vegetation, and which favor the production of the most valued and most profitable subjects of agriculture, are those that most often have those treasures closed against the efforts of industry by those extremes of heat and those excesses of moisture against which the physical frame of the cultivator is unable to contend; and the most prolific lands of the most abounding regions of the world are so oppressed with heat, saturated with moisture, or poisoned with miasma, as to make the attainment of their treasures the evidences of their cost in vigor, health, or of life itself.

That land is a happy one which enjoys the just mean between cold and heat, drought and moisture, arctic sterility and tropical exuberance; a land in which energies are stimulated by the bracing breath of a tempered atmosphere, cool enough to inspire physical action and elastic vigor; warm enough to assure the rewards of labor by the certainties of healthful maturity and abundant yields as returns for the labors bestowed, carried on under the happy conditions of a genial air, a friendly sun, and of a responsive soil.

Such are the conditions which North Carolina enjoys, with no portion of it either too cold on the one hand or too hot on the other to obstruct work at any season of the year, while at the same time presenting most remarkable apposition of the high temperate atmosphere of the North and the balmy breath of the semi-tropical South. In passing from east

to west, from the low lands of the coast, only a little elevated above the tide, to the high summits of the mountains, a mile or more above the sea, there is found the same gradation in temperature, in soil, in products, as if the same territory, instead of stretching from east to west over a number of degrees of longitude, had extended itself from south to north over the same number of degrees of latitude, thus giving to the State not only a soil which gives something of every product yielded by all the other parts of the United States, but a climate not alone favorable to its own people, but inviting the invalid from every other part of the country, North, South, East and West, to seek under its recuperative influences the blessings of renewed health, the restoration of impaired vigor, or the arrest of insidious ailments.

The eastern margin of the State is thrust far out into the ocean and brought within the soft influences of the Gulf Stream, assuring thereby not only the vegetation of a more southern latitude and its earlier and more rapid development—an important element in the success of the now great interest of truck farming—but of a climate so modified by a not excessive degree of heat and moisture as to be more constantly mild and genial, if somewhat more debilitating, than that enjoyed in the interior or farther west. On the other hand, the western margin lifts itself up to such heights as to gain all the advantages of a high latitude—a cooler climate, more invigorating atmosphere, more hardy and more vigorous vegetation, and a general healthfulness not surpassed on any portion of the globe. Intermediately lies that great zone, between the coast and the Mountain Section, emphatically a warm and genial temperate zone, with neither extremes of heat or cold, with a healthfulness unequalled over so extensive a territory, and with such general favoring conditions of soil and climate as to emphasize its special adaptation for the perfection of all the grains, field crops and fruits of the temperate zone.

HEALTHFULNESS.—Malarial diseases occur in summer and autumn in the Eastern Section, and in the lower portion of the Middle Section, chiefly along the river courses, but not of a malignant or dangerous type. And in latter years, with increased clearing of the lands and the greater and more perfect drainage, these have decreased in frequency and intensity. The general salubrity of the Eastern Section is indicated by the vigorous and robust appearance of the population, and the numerous instances of high stature and corpulent person, not found in the same region in the admittedly more salubrious climate of the Middle and Western Sections. These last are remarkably healthful, only in the Middle Section along some few rivers being found any degree of

deleterious malarial influences. In the sanitary department of the Census Reports, it is pronounced that one or two of the three most healthy localities in the United States are found in Western North Carolina in the mountain region. And it may be said here that in this latter region pulmonary consumption has never been known to originate, though that fatal disease is not there unknown. This feature of the climate has given celebrity for its remedial agency in such diseases, and caused the resort to it from all parts of the Union of invalids, finding in numerous instances decided amendment or perfect cure.

Epidemics of fatal diseases are unknown. The visitations of Asiatic cholera, scourging in its various visitations almost every other section of the country, have spared or overleaped North Carolina, with not even the exception of sporadic cases. The yellow fever has only at rare and distant intervals visited a few of the seaports, notably Wilmington in 1862. The grippe, so universal within the past two years, has partaken of the character of an epidemic, rarely however in a fatal form.

The temperature, the rainfall, the snowfall, the relative humidity, and other climatic features will be illustrated by scientifically elaborated tables appended to the end of this chapter. Here, it may be said in regard to the first that July is the hottest month of the North Carolina year; that for the spring the average temperature for the whole State is 57, for summer 77, for autumn 59, and for winter 41; the lowest winter mean being at Boone, in the mountains, and the highest at Southport, on the coast, which is 50. Or, taking typical points in each section as comparative points, we find the mean annual temperature of Raleigh, in the Middle Section, to be 60, its summer temperature 76, and its winter temperature 44, which, compared with Florence, Italy, shows the latter to have respectively the temperatures 59, 75 and 44. In the Eastern Section, Beaufort, on the coast, shows as the mean 62, 78, 46; while Genoa, Italy, has 61, 75 and 47. In the Mountain Section, Asheville shows mean temperatures for the year, for summer and for winter, of 54, 71, 38, compared with Venice, Italy, which has 55, 73, 38—an unexpected similarity of temperature with that of far-famed sunny Italy.

The cold of our winters is never prolonged and rarely excessive—in the Eastern and Middle Sections rarely falling below 10° Fahrenheit, though in the latter it has reached zero. In the mountain plateaus it is somewhat colder, there being a difference of about 10° in favor of the Middle Section. The heat in summer is not near so excessive in mid-summer as in the States farther north; and while these are subjected to brief epidemics of deadly sunstroke, here it is very rarely experienced.

THE RAINFALL varies throughout the State with the different sections. For the whole State the average varies little from 53 inches, annually, subject to the fluctuations of what may be called wet or dry years; for there is no fixed uniformity, though observations made through a long series of years gives the average here stated. The average for the Mountain Section is the smallest, that of the Eastern and Coast Section the greatest, and that of the Middle Section intermediate between the two. More minute details will be given farther on.

SNOW.—So far as observations have gone, the average annual snowfall in the State is assumed to be 6 inches. The amount in the Eastern or Coast Section is hardly appreciable, 4 inches in the Mountain, and $6\frac{1}{2}$ in the Middle and a portion of the Eastern Section. In some winters the fall of snow is very small; in others there occur single phenomenal storms, so rare as to be referred to as eras; in such cases a depth of from 2 feet to 30 inches having been attained. Contrary to popular belief the snows, while more frequent, are less deep among the mountains than on their eastern slope and in the Middle Section. As there is less rainfall so there is less snowfall in the Western than in the Middle Section. North-east winds and storms are unknown in the mountains. The wind-bearing clouds are from the south-east, discharging themselves most often in rain, with a sufficiently low temperature in snow, sometimes of considerable depth, but rarely covering the ground for a week at a time. Upon the change of wind from the south-east to the north-west, the inevitable course of a mountain rain or snow-storm, there is a sequence of violent snow-squalls, lasting through 24 to 36 hours, but rarely ever accumulating to the depth of more than an inch. The well-remembered blizzard, which ushered in the meeting of the Southern Interstate Immigration Convention, held at Asheville on December 17, 1890, was a signal and very violent exception.

FROSTS rarely occur before the 10th of October, and in the Eastern Section are frequently delayed until the middle of November. The cutting of tobacco is very rarely, though sometimes, anticipated by a killing frost. Late frosts, as late even as the 5th of May, the sequence of abnormally hot weather, closed with violent atmospheric disturbances, occasionally occur to the great injury of fruits and truck farms.

What is known as the thermal belt of the Mountain Section may properly be referred to in connection with frost on the principle of *lucus a non lucendo*; for in this thermal belt, so elevated, frost is unknown, or so light in its formation as to be of no detriment to fruits and vegetation. This belt, or locality of exemption, is found on both sides of

the mountains, the most noted of which is on Tryon Mountain, in Polk County: and so sharply defined are the lines of exemption that it stands out before the eye a horizontal belt of verdure between parallel lines above and below of blasted flower and foliage. Professor Kerr, in explanation of the cause of the phenomenon, says: "Suffice it to say, that it is due to the nocturnal stratification of the atmosphere of these mountain-enclosed basins, the different horizontal belts having different degrees of humidity whereby the surface radiation is controlled." Or it may be explained by the conflict in those mountain-enclosed basins between the stratifications, the lower stratum, heated by the rays of the sun during the day, rising by the force of natural laws into the upper air, the colder body; while the upper stratum, under force of the same laws, continually descends until towards dawn they meet at a point of equilibrium when farther descent is arrested by the influence of the rising sun, and the formation of frost is no longer possible. The fact remains that within the limits of these frost belts, fruits never fail, and at the height of from 1,500 to 2,000 feet frosts never fall. Such localities are found along the face of the Blue Ridge in Burke and McDowell Counties, along the face of the South Mountains in Burke, in the Brushy Mountains in the several counties through which that range passes, and at many points in the mountains west of the Blue Ridge. In the future, this phenomenal section must become of inestimable value in fruit and viticulture; for nowhere else is there such certain assurance of the security and maturity of peaches, and other tender fruit crops, or of the grape; to the successful cultivation of the grape the soil and the general conditions of the climate offer numerous inducements.

THE POPULATION OF THE STATE.

This is a topic of interest to the people of North Carolina from the marked fact of their present homogeneousness, excepting, of course, the important and large element of the African race, and the smaller and inferior remnant of the aboriginal Indian, still in possession of a large territory in the western part of the State, and the still smaller body of half-breeds known as the Croatans, occupying a portion of Robeson County, and believed, fancifully or otherwise, to be the descendants of the lost members of the lost colony of Captain John White, the first effort at permanent settlement made by Anglo-Saxon whites on the American continent. The whites of this State, now so intermingled and blended by intermarriage and industrial intercourse as to present

between them few distinctive traits of their origin, are the descendants, mediately or immediately, of the dominant European races coming directly to our shores, but more largely the off-shoots of the northern colonies grown populous and powerful enough to indulge in that early development of the American characteristic, love of change and adventure, or the more practical motive of bettering their condition by the acquirement of new lands, unrestricted in limit, of nearly nominal cost, and with the fame of unbounded fertility and unequalled salubrity.

Of those coming direct to our shores, the immigrating colonies were small and infrequent. After the efforts of colonization on the waters of the north-eastern section of the State, under the auspices of Sir Walter Raleigh and his successors had failed, a long interval passed away before decided or successful effort was made to plant other colonies on our shores. Among the more ambitious and well considered schemes was that of Sir John Yeamans, who, about the year 1659-'60, landed within the mouth of the Cape Fear River a body of several hundred colonists of English birth or descent from the island of Barbadoes. A settlement at about the same spot had previously been made by adventurers from New England, who thus made this section favorably known, and who eventually abandoned it, disappointed in overwrought expectation. In like manner the colony of Sir John, or the larger body of it, moved first to Port Royal, in South Carolina, and subsequently to the spot where they founded the present city of Charleston, but leaving behind them the impress of a good name and a high character, permanently stamped and manifesting itself upon their descendants in the present city of Wilmington and other points on the lower Cape Fear.

In 1709 the Baron De Graffenreid, with a colony of Swiss, established himself at the confluence of the rivers Neuse and Trent, and there founded the present city of Newbern—a settlement destined to be permanent, but of slow growth, and receiving few farther accessions from the native land of the founder.

A small colony of Huguenots found a refuge from persecution in the same section, but, beyond the impress of their principles and their names, contributed only in small degree to the settlement of North Carolina.

Perhaps the largest body of native Europeans coming approximately at one time, and constituting a distinctive foreign element, was the Scotch or Highland colony, which occupied the country along the upper waters of the Cape Fear, now known as the counties of Bladen, Cumberland, Moore, Robeson, Richmond and Harnett. These came, some voluntarily, most of them by compulsion, after the disastrous defeat of

Culloden in 1746. They have also blended with the other European families, but still retain in marked degree their national characteristics of piety, morality, and care of education.

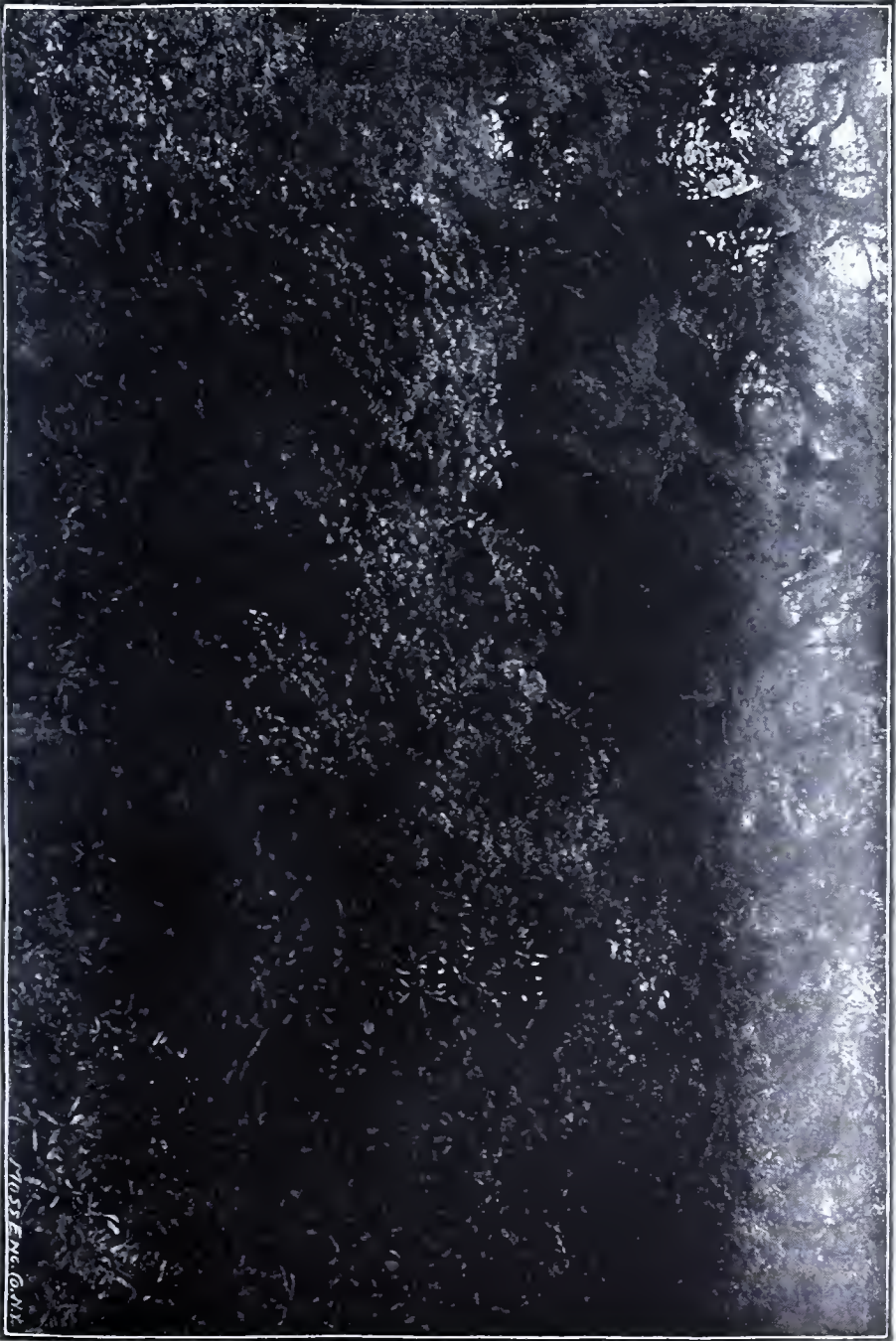
The Lords Proprietors, through their influence and inducements offered, added to the population, which, however, came in singly or in small groups and increased slowly, though early in the colonial history making the Eastern Section the most populous in the State.

The other chief elements of settlement were refugees from religious persecution in Virginia, who gradually filled up the north-eastern peninsula around the waters of Albemarle Sound and contiguous territory. In process of time bodies of immigrants arrived from New Jersey and Pennsylvania, hearing of the rich lands and fine climate of the upper country. Some bodies of these were of German descent. A still larger body was Scotch-Irish. Both planted themselves in harmonious contiguity from Orange County on the east to Catawba County—as that county became eventually known—along the rich bottoms or the finely timbered uplands of the Eno, the Yadkin and the Catawba Rivers, and became the foundation of that population destined to prove in coming years its love of liberty, its hostility to oppression, its indomitable courage, its wakeful care of education, its intense religious fervor, its energies and its industry; a population, withal, so widely diffused as to have been greatly instrumental in forming the character of the North Carolinian by the domination of these leading traits and qualities.

The location of his large colony of Moravians by Count Zinzendorff, in 1754, in the present county of Forsyth, is the only instance of attempted complete isolation, of the seclusion of an entire colony, and the culture of peculiar ideas and creeds—ideas and creeds more in harmony with the real aim and ends of a pure Christianity than human philanthropy has often aimed to put in practical force. This, like all other colonies, has in process of time blended with the great mass, but with the distinct and triumphant survival of its nobler characteristics—benevolence, integrity, devotion to morality, religion and education, and that untiring energy which brought prosperity to the wilderness colony, and future increase of growth and wealth to those fine towns, Winston and Salem, the matured, or rather still growing and maturing outgrowths of the simple, pious, unambitious, religious Moravian colony.

Of the negro population it suffices to say that it is chiefly descended from the slaves captured in former years in Africa, and introduced into the South by English, Dutch, and, in later years, New England slave-

KALMIA AND RHODODENDRON.



MISS E. C. GALT

ships. Importations of slaves into North Carolina was very rare after the beginning of this century. The increase, therefore, has been from natural causes, a genial climate, a humane public system and the kindly temper of the owners, a temper softened as much by humanity—very often by affection—as it was influenced by interest. Through these combined causes the negro population increased until it early attained the ratio to that of the whites it has held and still holds—about one-third of the whole.

Since the emancipation of the race, the policy of the State government, sustained by a just and humane public sentiment, has done everything consistent with the existence of insuperable and ineradicable ethnical antagonisms, to efface all the badges of former slavery. The negro has all the rights of the citizen, and is secured and protected in the exercise of them, with the same jealous safeguard of the law as the white citizen. He testifies before the courts without question as to race competency; he accumulates, if he will, property, personal and real; he is admitted on equal terms with the whites to the practice of the learned professions; he has the amplest freedom in the exercise of his religious beliefs, and the most absolute control in his ecclesiastical affairs. His infirm, the deaf, the dumb, the blind and the insane, are cared for by the State in institutions, proportionately to the number of patients, as large, as well built, as costly, and as well supervised by competent heads, as those of the whites. His education is well provided for, and though he pays a little more than one third of the poll-tax, and one-thirtieth of such property tax as is assigned to the maintenance of the school fund, his allotment of that fund is in proportion to population, not to that of race contribution. Apart from the colleges, some, if not all, of which are largely sustained by contributions from the Northern States, the negro shares in the Normal Institute system which is sustained by the State. He holds, also, his Annual Industrial State Fair, organized and controlled by his own race, but aided by annual appropriations from the State Treasury, and encouraged by the good will and active co-operation of the whites, thus having conspicuous opportunity to give evidence of his progress and his capacity to maintain friendly rivalry in the industrial field with the dominant race.

The Indian portion of the population is confined to the mountain counties of Jackson, Swain and Graham. They are a remnant of the tribe which was removed in 1836 to the trans-Mississippi reservation, and which obtained the consent of the government to be exempted from the decree of expatriation. They were allotted in the counties above named a tract of about 100,000 acres, and left in the enjoyment of their

former habits and customs. A restraining influence was exerted over them, with the purpose of bringing them gradually in conformity to the usages of the whites. They were taught the principles of Christianity, instructed in the rudiments of the English branches of learning, induced to abandon their nomadic habits and adapt themselves to agricultural life. They have schools among them; and a high school, under the supervision of the general government, is established at Yellow Hill, in Swain County, where children of both sexes are best taught, and also trained to mechanical, industrial and domestic arts.

Most of the tribe are christianized, and many of them speak the English language, though all retain and prefer to use their native tongue. They are quiet, peaceable, rarely violators of the law, but generally indolent and shiftless, and making slow progress towards the higher standards of civilization. They number between 1,500 and 1,800, and increase slowly.

Of the Croatans of Robeson County, little definite can be said. Their origin is involved in doubt, though it is clear that they form a mixed and distinct class of the blended Indian and white races. They may be called civilized, engaged in agriculture, trading and the mechanical arts, with more of energy and thrift than the native Cherokees. They are ordinarily law-abiding, though their vivacity of temperament sometimes leads to violent individual outbreaks and development of savage and revengeful temper, as was illustrated some years ago in the memorable Henry Berry Lowry incident. These people are provided by the State with their separate schools, and they take great interest in the education of their children.

The aggregate population of North Carolina by the Census of 1880, was 1,399,750; by that of 1890, 1,617,947—an increase of 218,197. It is classified as follows: Whites, 1,049,191; colored, 567,170; Chinese and Japanese, 15; Indians (excluding Croatans), 1,571.

The foreign-born population is, by the same census, 3,742. The descendants of foreigners form a considerable element, but their numbers do not materially affect the homogeneousness of the mass of population. The large bodies of immigrants which annually lodge themselves in the territory of the United States, direct themselves to other homes than are to be found in the South Atlantic States. The immigration into North Carolina is largely from the New England, Middle and some of the North-western States, and gives many and much desired and much valued accessions to sources of material development.

The following table of population, as prepared from the Census Tables of 1890, is to be accepted as accurate:

	<i>Whites.</i>	<i>Colored.</i>	<i>Total.</i>
State total.....	1,055,382	562,565	1,617,947
<i>Counties.</i>			
Alamance	12,688	5,583	18,271
Alexander	8,588	842	9,430
Alleghany	6,061	462	6,523
Anson	10,237	9,790	20,027
Ashe	15,033	595	15,628
Beaufort.....	11,869	9,203	21,072
Bertie	7,885	11,291	19,176
Bladen	8,646	8,117	16,763
Brunswick.....	6,139	4,761	10,900
Buncombe	28,640	6,626	35,266
Burke	12,378	2,561	14,939
Cabarrus	12,683	5,459	18,142
Caldwell.....	10,737	1,561	12,298
Camden	3,347	2,320	5,667
Carteret	8,528	2,297	10,825
Caswell.....	6,639	9,389	16,028
Catawba	16,073	2,616	18,689
Chatham	17,214	8,199	25,413
Cherokee	9,655	321	9,976
Chowan	4,010	5,157	9,167
Clay	4,055	142	4,197
Cleveland.....	17,301	3,093	20,394
Columbus.....	11,804	6,052	17,856
Craven	7,175	13,358	20,533
Cumberland	14,952	12,369	27,321
Currituck.....	4,731	2,016	6,747
Dare	3,362	406	3,768
Davidson	18,174	3,528	21,702
Davie	8,769	2,852	11,621
Duplin.....	11,600	7,090	18,690
Durham	10,712	7,329	18,041
Edgecombe	8,513	15,600	24,113
Forsyth.....	19,433	9,001	28,434
Franklin.....	10,755	10,335	21,090
Gaston	12,927	4,837	17,764
Gates	5,539	4,713	10,252
Graham	3,137	176	3,313
Granville	12,122	12,362	24,484
Greene	5,281	4,758	10,039
Guilford.....	19,820	8,232	28,052
Halifax.....	9,614	19,294	28,908
Harnett	9,453	4,247	13,700
Haywood	12,829	517	13,346
Henderson.....	11,211	1,378	12,589
Hertford	5,906	7,945	13,851
Hyde	4,962	3,941	8,903
Iredell	19,516	5,946	25,462
Jackson	8,680	832	9,512
Johnston	19,917	7,322	27,239

<i>Counties.</i>	<i>Whites.</i>	<i>Colored.</i>	<i>Total.</i>
Jones.....	3,885	3,518	7,403
Lenoir.....	8,517	6,362	14,879
Lincoln.....	10,028	2,558	12,586
McDowell.....	9,114	1,825	10,939
Macon.....	9,436	666	10,102
Madison.....	17,095	710	17,805
Martin.....	7,838	7,383	15,221
Mecklenburg.....	23,141	19,532	42,673
Mitchell.....	12,252	555	12,807
Montgomery.....	8,982	2,257	11,239
Moore.....	13,985	6,494	20,479
Nash.....	12,186	8,521	20,707
New Hanover.....	10,089	13,937	24,026
Northampton.....	9,224	12,018	21,242
Onslow.....	7,392	2,911	10,303
Orange.....	9,705	5,243	14,948
Pamlico.....	4,767	2,379	7,146
Pasquotank.....	5,201	5,547	10,748
Pender.....	5,967	6,547	12,514
Perquimans.....	4,719	4,574	9,293
Person.....	8,251	6,900	15,151
Pitt.....	13,192	12,327	25,519
Polk.....	4,807	1,095	5,902
Randolph.....	21,848	3,347	25,195
Richmond.....	10,989	12,959	23,948
Robeson.....	16,629	14,854	31,483
Rockingham.....	15,197	10,166	25,363
Rowan.....	17,142	6,981	24,123
Rutherford.....	15,073	3,697	18,770
Sampson.....	15,960	9,136	25,096
Stanly.....	10,629	1,507	12,136
Stokes.....	14,386	2,813	17,199
Surry.....	16,926	2,355	19,281
Swain.....	5,652	925	6,577
Transylvania.....	5,368	513	5,881
Tyrrell.....	3,000	1,225	4,225
Union.....	15,712	5,547	21,259
Vance.....	6,434	11,147	17,581
Wake.....	26,093	23,114	49,207
Warren.....	5,880	13,480	19,360
Washington.....	4,961	5,239	10,200
Watauga.....	10,180	431	10,611
Wayne.....	15,115	10,985	26,100
Wilkes.....	20,633	2,042	22,675
Wilson.....	10,884	7,760	18,644
Yadkin.....	12,421	1,369	13,790
Yancey.....	9,197	293	9,490

GOVERNMENT AND TAXATION.

The government of North Carolina is a pure democracy. It is based upon the will of the people as expressed in the Constitution, an instrument framed by them in their sovereign capacity through delegates appointed for that purpose. The will of the people of this and of each State, when thus expressed, and in conformity to the Constitution of the United States—for the will of the people of each State is subordinate to the collective will of the people of all the States—is the supreme law. The State Constitution thus made is the measure and test of all laws passed by the Legislature, and these laws must stand or fall by their agreement or disagreement with it.

The Constitution is a short instrument but wide in its scope and bearing. It contains a brief statement of the fundamental principles of civil and individual liberty, creates the different departments of government—Executive, Legislative and Judicial—and prescribes the powers of each; establishes educational, charitable and penal institutions; directs who shall be liable to duty in militia; and prescribes the rights of citizenship.

The Legislature enacts laws. The Judiciary passes upon them when a question arises as to their constitutionality, and expounds them when a question is presented as to their meaning. The execution of the law is entrusted to the Executive. The Executive in this State possesses no veto upon the acts of the Legislature. When the law is once made, his duty, as that of every other citizen, is obedience in his sphere.

The rights of citizenship is the only point for consideration here; and these depend upon age, residence and previous citizenship.

A citizen of a foreign country can make himself a citizen here by becoming a resident; declaring before the proper tribunal his purpose to become a citizen; and taking the prescribed oath of allegiance.

A citizen of any other of the United States becomes a citizen here by changing his residence from that State to this.

All persons who are born and continue to reside within this State are citizens thereof.

The chief privilege of citizenship is suffrage. The Constitution ordains that, "every male person born in the United States, and every male person who has been naturalized, twenty-one years old, or upward, who shall have resided in this State twelve months next preceding the election, and ninety days in the county in which he offers to vote, shall be deemed an elector."

Suffrage here embraces the right to vote for every officer in the State from the Governor down to constable. One only exception to this principle exists in this State—that is in the case of Justices of the Peace. These are appointed by the Legislature. Logical consistency was sacrificed in this case to secure what, in the judgment of the Convention, was a point of far higher importance, namely, the sound administration of justice in the county, and the administration of county finances, both of which are under the control of the Justices. In many of the eastern counties the colored population largely predominates. Newly emerged from slavery, and consequently ignorant of the duties of citizenship; ignorant of the law and therefore incapable of administering it; themselves without property and therefore without the judgment necessary to administer the finances of a community; it was deemed best to repose the power of making magistrates in another body; thus guarding those communities against error, whether of ignorance or design, until experience and education should make those colored majorities safe repositories of such power. This provision of the Constitution was inspired by no feeling of enmity toward the colored man; it was a provision of safety as well for the colored as for the white man. The provision was made impartial in its operation; it applies to every county in the State, whether the majority be white or black, and the object was secured. No such provision was necessary in the cases of officers elected by general ticket, for there the experience of the white population accustomed to the exercise of citizenship and educated to its responsibilities would counterbalance the inexperience of the colored race.

Citizenship under the Constitution of North Carolina carries with it high and important rights apart from suffrage. It confers a right to an education by the State, such as will qualify the citizen for the duties to be performed. If he be without property, it gives him a right to support from the county, if incapable of earning it by sickness or old age. If he have property and is overtaken by irremedial misfortune, it exempts from execution personal property to the value of five hundred dollars, and vests in the owner in fee-simple the homestead and the dwellings and the buildings used therewith not exceeding in value one thousand dollars, to be selected by him. The unfortunate have thus a secure refuge in case of disaster in business.

It regulates taxation by providing that the General Assembly levying a tax shall state the object to which it is to be applied, and enjoins that it be applied to no other purpose. It establishes an equation between the property and the capitation tax by directing that the capitation tax levied on each citizen shall be equal to the tax on property

valued at three hundred dollars in cash. The capitation tax is levied on every male inhabitant in the State over twenty-one and under fifty years of age, and shall never exceed two dollars on the head. The effect of this limitation upon the capitation tax restricts the tax on each hundred dollars worth of property to sixty-six and two-thirds cents. It further directs that the amount levied for county purposes shall not exceed the double of the State tax, except for a special purpose and with the approval of the Legislature.

The rate of State tax now levied for the present year is 28 cents on one hundred dollars valuation, besides 15 cents for school purposes. In addition there are taxes levied on certain pursuits, industries and interests devoted to certain purposes, some in aid of the general school fund, some for pensions.

The following statement from the State Auditor's Report for the year ending November 30, 1891, sets forth the aggregate number and value of the various subjects of taxation in the State, and the gross amount of the State, school and county taxes derived from the same:

STATE TAXES.		
<i>Number.</i>	<i>Valuation.</i>	
7,374,295 acres of land.....	\$107,031.851	\$267,579 63
44,645 town lots.....	34,893.805	87,234 01
139,005 horses.....	7,279,768	18,199 42
101,609 mules.....	5,790,626	14,426 56
789 jacks and jennies.....	41,069	102 67
37,944 goats.....	29,278	73 19
627,767 cattle.....	4,849,192	12,122 98
1,194,865 hogs.....	1,561,553	3,903 88
383,601 sheep.....	392,142	980 35
Value of farming utensils, etc.....	12,134,455	30,336 14
Money on hand or on deposit.....	4,201,447	10,503 62
Solvent credits.....	20,166,452	50,416 13
Stock in incorporated companies.....	2,739,179	6,847 95
Other personal property.....	15,762,557	39,406 37
Total valuation.....	\$216,872,374	
\$376,265 net income and profits.....		2,112 34
Theatres.....		405 00
Traveling theatrical companies.....		60 00
Concerts and musical entertainments for profit.....		252 50
Lectures for reward.....		33 00
Museums, waxworks or curiosities.....		48 00
Circus or menagerie.....		600 00
Side shows.....		250 00
Shows under canvass, etc.....		700 00
Carried forward.....		\$ 366,593 74

Brought forward.....	\$ 366,593 74
Billiard saloons.....	1,378 00
Bowling alleys, skating rinks, etc.....	518 33
Public ferries, toll-bridges, etc.....	248 15
Livery.....	625 50
Itinerant dentists, opticians, etc.....	100 00
Commission merchants.....	662 51
Merchants or other dealers.....	28,893 52
Dealers in spirituous liquors.....	3,101 87
Peddlers.....	1,404 09
Itinerant merchants.....	25 00
Dealers in fruit trees.....	15 00
Itinerant lightning-rod dealers.....	50 00
Liquor dealers—Class 2.....	1,500 00
Tobacco warehouses.....	2,015 00
Marriage licenses.....	12,312 38
Subjects unlisted.....	198 87
Delinquents.....	529 87
Arrears for insolvents.....	122 81
Double taxes.....	1,068 97
Total general taxes.....	<u>\$601,249 91</u>

SCHOOL TAXES.

153,486 white polls.....	299,994 43
60,832 colored polls.....	90,420 34
Bank stock.....	3,278 48
Railroad property.....	16,971 73
General property—white.....	283,953 13
General property—colored.....	8,735 13
Licensed dealers in spirituous liquors.....	70,639 12
From fines, forfeitures and penalties.....	7,080 10
From other sources.....	1,416 48
Total school taxes.....	<u>\$712,489 53</u>

COUNTY TAXES.

County purposes.....	691,590 65
Special county taxes.....	202,861 49
Total county taxes.....	<u>\$894,451 54</u>

On white polls there is levied a tax of \$229,904.32; on colored polls, \$90,420. On general property the whites pay a tax of \$280,904, and the colored people a tax of \$8,735.26. In addition to this general tax, there is a tax on bank stock, railroad property, licensed liquor dealers, fines, &c., and some minor sources, most of which is paid by the whites.

The Executive power of the State Government is vested in a Governor and a Lieutenant Governor, elected by the popular vote for the

term of four years, both ineligible for two successive terms; an Attorney General, a State Treasurer, an Auditor, a Secretary of State, and a Superintendent of Public Instruction, all of whom are eligible for reëlection.

The Legislative department, also elected by the popular vote, elected for the term of two years, and holding biennial sessions. The Senate consists of 50 members, and is presided over by the Lieutenant Governor of the State, and the House of Representatives, of 120 members, presided over by a Speaker elected from among the members of the same. The sessions are limited by the Constitution to sixty days, but may be prolonged on emergency, but with suspension of the *per diem* pay. Extra sessions may be called by the Governor should urgent cause make it necessary; but such sessions are limited to twenty days, but may be extended farther, under the limitations of pay that govern the regular sessions.

The Judicial department consists of a Supreme Court, presided over by a Chief Justice, and, in conjunction with four Associate Justices, forming the highest court in the State. The Justices are elected for a term of eight years, and are eligible to reëlection.

The Circuit or Superior Court is composed of twelve members, elected by the people of a like number of districts, and are elected for the same length of term and the same eligibility to reëlection as the Justices of the Supreme Court.

In addition to these are the criminal courts of New Hanover and Mecklenburg and of Buncombe, having original jurisdiction in all criminal matters originating in their respective counties, but having none in civil causes of action.

The above, together with the magistrates' courts, having jurisdiction over small sums and minor offences, and the Boards of County Commissioners, having supervision over, the direction and administration of county affairs, constitute the judicial system of North Carolina.

STATE DEBT.

The following statement, drawn from the report of the Public Treasurer submitted to the General Assembly at the session of 1891, exhibits the amount of the bonded debt of the State at the time of the enactment of the law of March 4, 1879, "An act to compromise, commute and settle the State debt."

These bonds include only the obligations of the recognized bonds, those known as the special tax bonds having been declared unconstitutional and invalid.

The recognized bonded debt, recognized by the forenamed act, are the following:

Bonds issued before May 20, 1861, the last date of which class is April 1, 1861, exchangeable at forty per cent.....	\$ 5,477,400 00
Bonds issued during and since the late war, for internal improvement purposes, and certificates of State Board of Education, exchangeable at twenty-five per cent.....	3,261,045 00
Bonds issued by authority of funding acts of March 10, 1866, and August 20, 1868, exchangeable at fifteen per cent.....	3,888,600 00
Total recognized debt.....	\$ 12,627,045 00

Bonds have been surrendered and exchanged, as follows:

Class 1, at forty per cent.....	\$ 5,081,900 00
Class 2, at twenty-five per cent.....	2,637,045 00
Class 3, at fifteen per cent	3,332,100 00
Total amount of bonds exchanged.....	\$ 11,051,045 00

New four per cent. bonds have been issued as follows. in exchange:

For bonds at forty per cent	\$ 2,032,760 00
For bonds at twenty-five per cent	659,261 25
For bonds at fifteen per cent.....	499,815 00
	\$ 3,191,836 25

The amount of new four per cent. bonds issued embraces certificates of fractional sums of less than fifty dollars given in exchange, which are receivable for new bonds of the denominations prescribed in the act.

The fundable bonds not surrendered, are as follows:

Redeemable at forty per cent	\$ 395,500 00
Redeemable at twenty-five per cent	624,000 00
Redeemable at fifteen per cent.....	556,500 00
Amount of old bonds outstanding	\$ 1,576,000 00

The following is the summary of the two classes of new bonds issued:

Four per cent. bonds	\$ 3,219,100 00
Six per cent. bonds.....	2,720,000 00
	\$ 5,939,100 00

This latter debt, \$2,720,000, was incurred for the construction of the North Carolina Railroad, which is in great part owned by the State. The income from the dividends realized by the road is not only sufficient to pay the interest, but leaves a surplus which is regularly funded from year to year, the aggregate of which will extinguish the debt at the maturity of the bonds. This debt does not now impose, nor will it in future impose, one cent of taxation upon the people of the State. The first amount, \$3,589,511.25, therefore represents the entire debt for which the property of the State is subject to be taxed.

The total valuation of real and personal property in North Carolina is, according to the Auditor's Report for 1890, \$216,872,374. But the valuation of property in this

State is known to be from one-third to one-half below its real value. For the purpose of ascertaining the true value of the property of the State, an addition in that proportion must be made to the valuation above given. Taking, however, the valuation as given in the Auditor's Report, it will be seen that a tax of seven and one-half cents upon the hundred dollars worth of property will pay the interest upon the whole State debt.

But there exists in fact no necessity for such a tax, light as it would be. The act under which the debt was compromised, appropriates certain taxes therein enumerated, known as privilege taxes, to the payment of the interest; and by the terms of the act this appropriation is made a part of the contract between the State and the bondholders, and is therefore inviolable. From this source the amount realized is so large, that the remainder of the interest is provided by a tax of only four cents on the hundred dollars worth of the property of the State.

RELIGION.

The religious denominations of North Carolina stand upon absolute equality in respect to the laws. The vigorous temper of the people during Colonial days in resisting the imposition of a State religion has never relaxed; and the absolute severance of Church and State became a cardinal and inviolable principle in the assumption of popular sovereignty. The laws and the Constitution extend no special favor to creed or denomination, assuring freedom to all to worship God according to the dictates of their own consciences.

The following table presents as accurately as can be ascertained the present membership of the various denominations in the State. Two of them, the Christian and the Protestant Methodists, are classed with their denominations of other States, there being no separate State report:

Methodist Episcopal Conference (white).....	118,895
A. M. E. Zion (colored Methodist).....	32,000
M. E. Church (Methodist)	7,200
Christian (O'Kelleyites) in Virginia, Georgia and North Carolina.....	10,000
Protestant Methodists in North Carolina and Virginia.....	7,000
Quakers	4,500
Lutherans	4,150
Roman Catholics.....	1,000
Moravians.....	2,000
Presbyterians.....	25,553
Episcopalians.....	7,751
Baptists (Missionary, white)	170,335
Baptists (Missionary, colored).....	150,675
Baptists (Anti-Missionary).....	9,750
Baptists (Campbellites).....	6,000
Baptists (Free-Will).....	6,516
Whole number of Missionary Baptists.....	321,010

PUBLIC INSTITUTIONS.

The machinery of the State government is aided or amplified in its operations by the assignment of certain special functions to be discharged by agencies adapted to their performance.

These public institutions have oversight over certain penalties attached to the violation of law, and also of carrying out those methods provided for the cure or amelioration of mental suffering and physical infirmity, of those scientific investigations designed to elevate the arts of agriculture, or search into the causes of agricultural disasters, or aid the agricultural population to reap the surest rewards of their industry by intelligent direction of their labor through information imparted by competent directors; and in general the public institutions comprise all such wise and enlightened principles that tend to enlighten the popular mind, add to its prosperity, relieve its sufferings, mitigate its burdens, and practically illustrate the mutuality of interest existing between the State and the people, between the government and the governed.

These institutions consist, in general terms, of the charitable and penal institutions, of the Agricultural Department and Agricultural College, of the Agricultural Experiment Station, of the Geological Museum, of the State Library, of the Bureau of Labor Statistics, of the Railroad Commission, of the Orphan Asylum, and, in a literal form, of the public buildings in which to conduct the many operations incident to the institutions named above.

THE STATE HOSPITALS, originally known as the Asylums for the Insane, are three in number—one for the whites at Raleigh, another for the same race at Morganton, and one for the colored at or near Goldsboro. The first is near the city of Raleigh, occupying a building, of brick, three stories in height, and upwards of 700 feet in length, and with capacity to accommodate, at the time of its construction, all the insane patients that might be presented for admission. Dr. William R. Wood is the present Superintendent, and the number of patients at the date of the last report was 296—142 males, 154 females.

THE WESTERN HOSPITAL.—The increasing number of applications for the admission of insane patients compelled legislative action to provide other and ampler provision for them, and the institution at Morganton was built, a structure of upwards of 900 feet in length, and with every convenience of ample grounds, water, and whatever was necessary as curative or ameliorative adjuncts to the relief of mental disease. The institution is under the superintendency of Dr. P. L. Murphy. At the last report the number of patients was 490—233 males and 257 females.

EASTERN INSANE ASYLUM.—Upon the addition of the colored race to the ranks of citizenship, their claims, their rights and their necessities required provision for the treatment of their insane; and a large and commodious brick structure was erected near the town of Goldsboro, a place most accessible to the centre of colored population. The institution is conducted on precisely the same principles, controlled by the same rules, and furnished with the same conveniences as are provided for the institutions for the whites. Dr. J. F. Miller is Superintendent. At the last report the number remaining in the institution was 231—males 98, females 133.

DEAF, DUMB AND BLIND INSTITUTION.—The original institution was established in Raleigh in 1846, and now occupies the whole of one of the squares reserved by the State for its own uses in the plan for the laying out of the city of Raleigh. The whole is now covered with suitable buildings, or laid out in grounds with hard shaded walks. The instruction is such as is suited to make useful and self-supporting citizens out of those so unfortunate as to be denied the senses of sight, speech and hearing, and the results have been highly satisfactory.

The Colored Department, under the same general supervision, occupies suitable buildings and grounds in a different part of the City of Raleigh, in no wise inferior, except in extent, to those provided for the whites.

The last biennial report—to Nov. 30, 1890—gives the following as the number, sex, color, and infirmity of the pupils: Deaf mutes, males, 82; females, 82. Blind, males, 71; females, 58; a total of 293. Of these there were colored deaf mute males 26, females 27. Blind males 17, females 18. Mr. W. J. Young is Superintendent.

All of these charitable institutions are liberally supported by biennial appropriations from the State Treasury, and pupils or patients are taught or treated without charge.

The increasing number of applications to the blind department in the Asylum at Raleigh, in connection with the also increasing number of deaf and dumb, enforced the necessity of ampler provision for the latter; and the Legislature, in its session of 1891, provided for the erection of an additional institution at Morganton, which is not yet complete.

THE PENITENTIARY.—Under the provisions of the Constitution of North Carolina, adopted by the Convention of 1868, provision was made for the erection of suitable buildings for the confinement, detention and employment of such violators of the law as had subjected themselves to the penalties of a lengthened period of imprisonment. These buildings

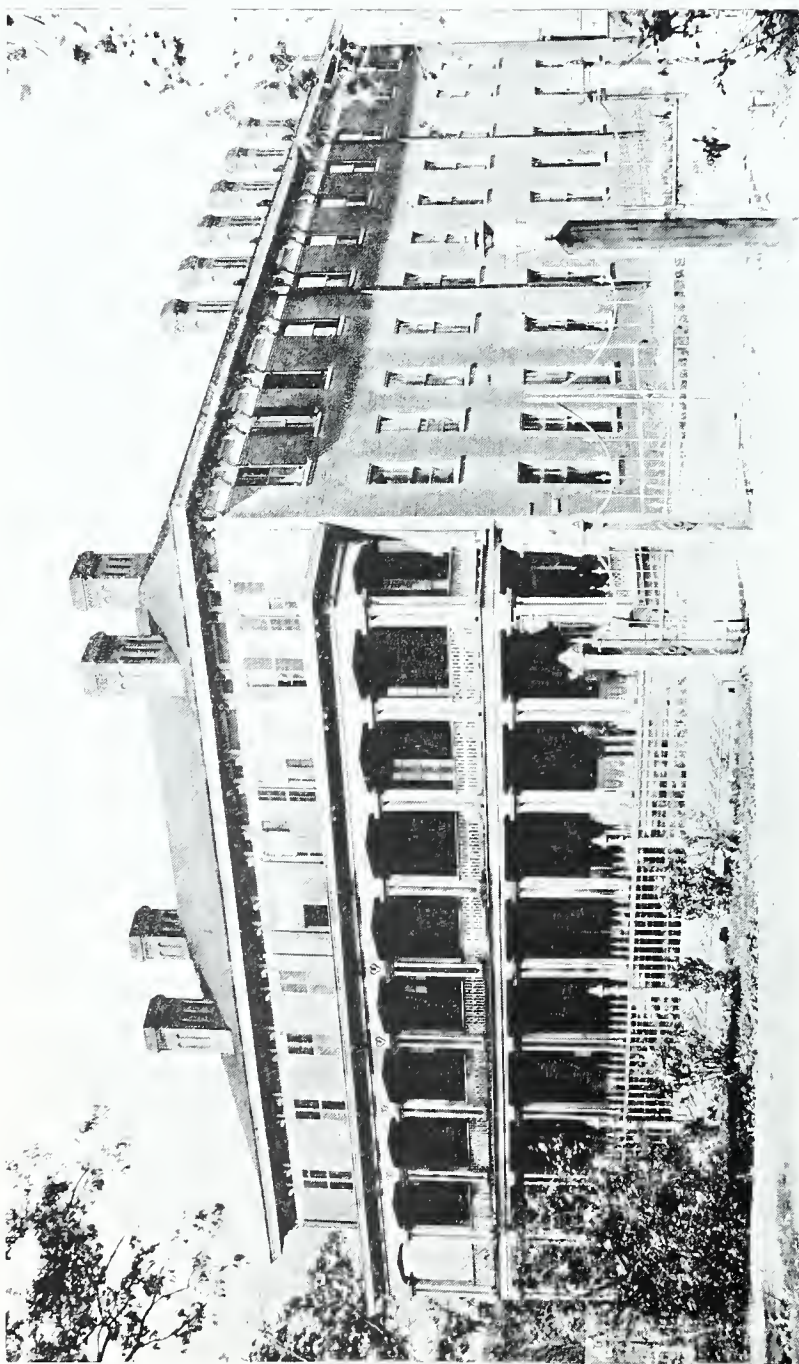
were ultimately located in Raleigh, and are at length so far completed as to be fully applicable to their designed purposes. Architecturally they are large and imposing in style, with every safeguard for the security of prisoners—every provision for health and proper comfort, and every facility for useful employment. The policy, originally designed, to confine all the prisoners within the walls of the institution at work, or in idleness, was promptly abandoned in the change of parties in 1870; and since that period only those confined for life, or for desperate crimes, or those under infirmity, are rigorously confined within the premises, together with such as might be usefully and profitably assigned to needed mechanical work, under the eye of the Superintendent. The others, the able-bodied and the shorter term convicts, were applied to such outside work as would return some revenue to the institution, or diminish the costs of such work as the State was executing in its sovereign capacity. Thus in the latter, the Governor's Mansion, the Supreme Court building, and others have been constructed, bricks made, stones dressed, &c.; and in the larger field of outside work, extensive railroad lines have been built, canals dug, swamps drained, in all of which compensation, not always reaching full reimbursement to the State, has been made. The policy of making the Penitentiary self-sustaining by undertaking work heretofore done at small charge on the legitimate basis of a hired labor system, and the leasing and working of large farms by a force familiar to the work, and the crops under culture has proved successful, and now, instead of being a charge upon the State, the Penitentiary is becoming a source of revenue.

The system is as humane as is consistent with the idea of punishment of crime, but guarded against needless rigor or wanton cruelty by the periodical visits of commissioners appointed by the State.

The number of convicts at the last report made to the Legislature of 1891, was 1,302, of which 217 were white males, and 7 white females; and 1,034 colored males, and 42 colored females, and 2 Indian males.

Paul F. Faison is President of Board of Directors, and W. J. Hicks Architect and Warden.

THE AGRICULTURAL DEPARTMENT.—Nothing so clearly indicated the determined and intelligent purpose of the leading minds of North Carolina to elevate its great and chiefest interest to its rightful dignity and prominence, and to prove also its claim to consideration, to respect, as an avocation employing brain as well as muscle, as when the Legislature met promptly and unreservedly the demands of the intelligent agricultural interest and established the Agricultural Department; and in doing so there was no half-way movement. The equipment of suit-



DEPARTMENT OF AGRICULTURE BUILDING, RALEIGH

able and handsome and conveniently arranged buildings was ample; the appropriations for the maintenance of the various branches of the department liberal, and the powers given for the enforcement of the legislation which declared the purpose and defined its duties abundant. Therefore the Agricultural Department came into existence with the enthusiastic sanction of popular sentiment and under the shield and protection of the public law, and stands not only a monument to the enlightened spirit of the age, but a beacon light of hope and encouragement to that great fundamental interest which, more than all others, has been the victim of neglect, the least consideration of statesmanship.

It must be stated, briefly, that the Department occupies a building in the city of Raleigh, originally large and convenient, but now arranged so as to be specially adapted to its many uses; and that in the prosecution of the work assigned to it it has done—and this will suffice to illustrate its usefulness—what is expressed in the words of another: “It has saved to the State thousands of dollars annually; it has induced investments of large amounts in the mines, forests and agricultural lands of the State, and has developed the phosphate beds, the oyster grounds, and the mineral deposits and coal fields of the State; it has gathered statistics and published valuable books descriptive of the whole State, and distributed them so wisely that this is among the best advertised States; and has, as its last and greatest effort, the organization of the successful College of Agriculture and Mechanic Arts.” In its relation to the former it has been, and continues to be, of inestimable value to the farmer. For as in the advancement of agriculture into the ranks of a science, so was there enormous application of the presumably scientifically compounded artificial fertilizers. Here was opened a wide and gaping door to fraud, which the Department was empowered to step forward and close. This has been done so vigorously, watchfully and effectively that fraudulent fertilizers are banished from the market, trustworthy brands have replaced them, and at the same time a great reduction in the cost has been made.

Mr. John Robinson is Commissioner of the Department, and Mr. T. K. Bruner is the Secretary and Auditor.

By recent Act of Assembly, Mr. Robinson is also charged with the duties of Commissioner of Immigration, and to him all inquiries should be addressed on matters pertaining to immigration, and for information of the locality, nature and value of lands, or upon any subject inviting to investment in the pursuits and industries of this State.

NORTH CAROLINA COLLEGE OF AGRICULTURE AND MECHANIC ARTS, RALEIGH.

The mission of the North Carolina College of Agriculture and Mechanic Arts and its general purpose is to teach the principles and application of the sciences, illustrating sound theory by daily practice, as to make out of its students useful and successful men, instead of mere intelligent drones.

One of the special objects of the College is to foster a higher appreciation of the value and dignity of intelligent labor and the worth and respectability of laboring men.

Some of the very best thinkers of our own time in this and other countries have acknowledged the advantage of manual training of boys and young men in well equipped schools, and institutions of this kind are now being recognized as among the practical necessities of every Commonwealth.

In all branches of industry the competition of the world is bringing about a closer margin of profits, and demand is made upon men of every calling to study the best methods and closer economy in first production. The whole trend of such institutions is calculated to work out such economic results.

The College is intended, not to produce theorists, but practical young men, who will become intelligent farmers, horticulturists, cattle and stock raisers, dairymen—men who will be interested in making their work profitable.

The State also has need of good mechanics, carpenters, architects, draughtsmen, contractors and manufacturers, and the College will help to make them.

While the College will give practical instruction to as many of our youth as it can accommodate, it is made the duty, as it will be the pleasure, of the members of the Faculty of the College to take an active part in Farmers' Institutes, which are accomplishing so much of good in many States of the Union, and which have happily been inaugurated by the Board of Agriculture and by the farmers themselves in our State.

The Professors will be at the service of the farmers of the State whenever they can impart such special information as may be sought at their hands. They will be glad to furnish the best methods of building and filling silos, of planning barns, stables, &c. They will also be expected to investigate and furnish thoroughly approved formulas for remedies in diseases of cattle, for destruction of insect pests, formulas for composting, &c.

LOCATION.—The College site and farm, in all comprises a tract of about sixty-two acres.



NORTH CAROLINA COLLEGE OF AGRICULTURE AND MECHANIC ARTS, RALEIGH.

Situate on a commanding eminence, on the Hillsboro road, one of the principal highways into Raleigh, at the distance of three-fourths of a mile from its corporate limits, the site is, in all respects, a suitable one. The ground slopes from the building in every direction, giving almost perfect drainage, as well as handsome views of the College buildings from every direction.

BUILDINGS.—The present buildings are of North Carolina brick. The granite used is from Wake County, the brownstone from Anson County.

The main building is 170 by 90 feet, part one story and basement.

Every precaution has been taken for good sanitary arrangement. The class-rooms and dormitories are large and well-lighted, and the remaining rooms, such as dining-rooms, chapel, reading-rooms, &c., are well arranged.

A carefully planned brick workshop, two stories high. This building contains a machine-shop, forge-shop, woodwork shop, carpenter shop, class-room, office, and washroom, and is equipped for thorough work in every particular.

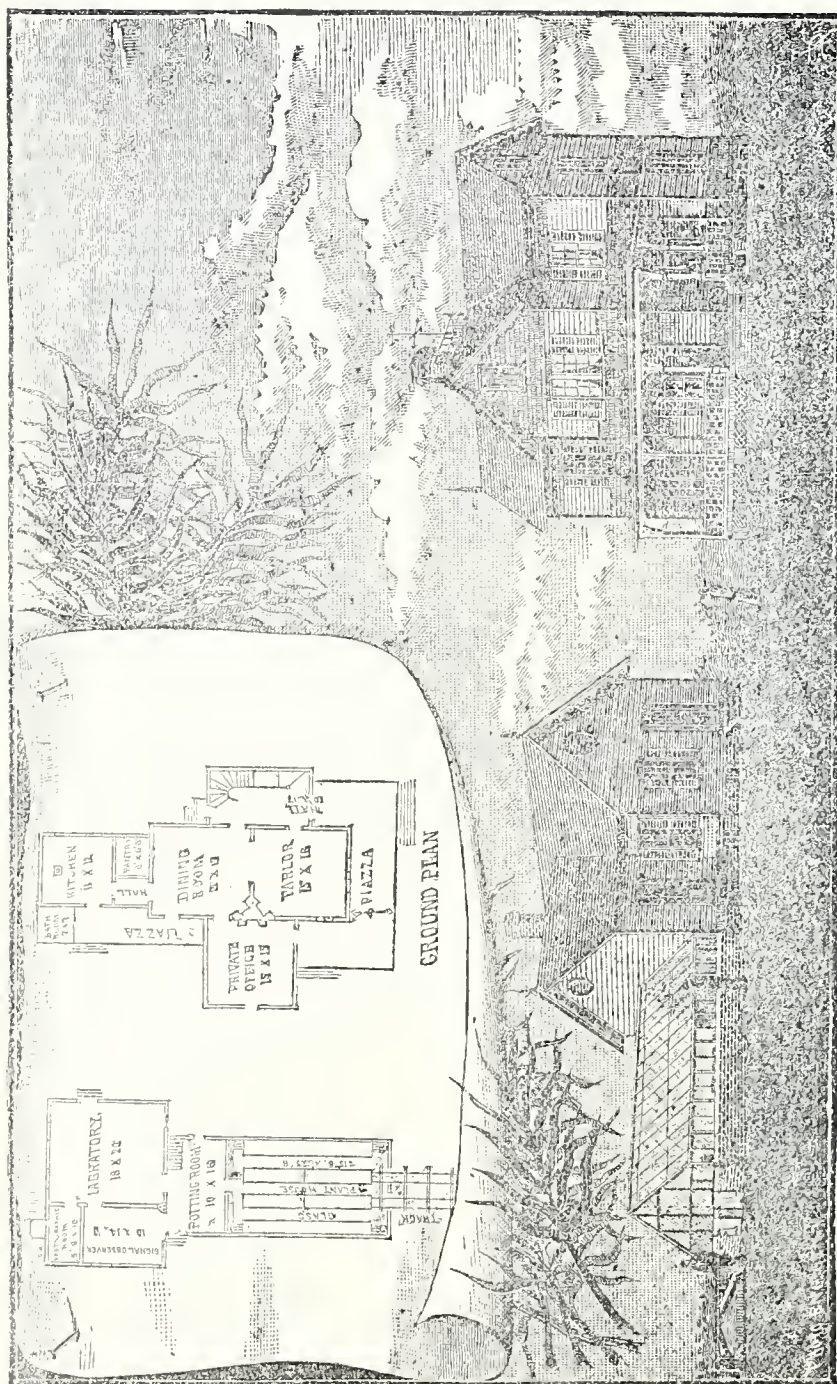
It is intended to erect, as rapidly as means will permit, barns, silos, stables and the like, which shall be models of their kind. Meanwhile, for all purposes of instruction, are already erected on the Experiment Station Farm large buildings for such purposes, that the students will have the use of, near by the Agricultural and Mechanical College.

In the basement of the main College building every convenience has been provided for housekeeping, and no facility is lacking in the boarding department.

Mr. Alexander Q. Holladay is at present President of the institution.

NORTH CAROLINA AGRICULTURAL EXPERIMENT STATION, ALSO THE FERTILIZER CONTROL STATION AND STATE WEATHER SERVICE, ORGANIZED 1877, RALEIGH, N. C., is under the control of the Board of Trustees of the Agricultural and Mechanical College, and as now constituted is a part of the College. The officers of the Station are:

H. B. BATTLE, PH. D.....	Director and State Chemist.
F. E. EMERY, B. S.....	Agriculturist.
GERALD MCCARTHY, B. SC.....	Botanist and Acting Entomologist.
W. F. MASSEY, C. E.....	Horticulturist.
C. F. VON HERRMANN (U. S. Weather Bureau)...	Meteorologist.
B. W. KILGORE, B. S.....	Assistant Chemist.
F. B. CARPENTER, B. S.....	Assistant Chemist.
T. L. BLALOCK, B. S.....	Assistant Chemist.
J. S. MENG, B. S.....	Assistant Chemist.
ALEXANDER RHODES.....	Assistant Horticulturist.
ROSCOE NUNN (U. S. Weather Bureau).....	Assistant Meteorologist.
J. L. CUNINGIM, A. B.....	Secretary.



VIEW OF SOME OF THE EXPERIMENT FARM BUILDINGS, NEAR RALEIGH, N. C.

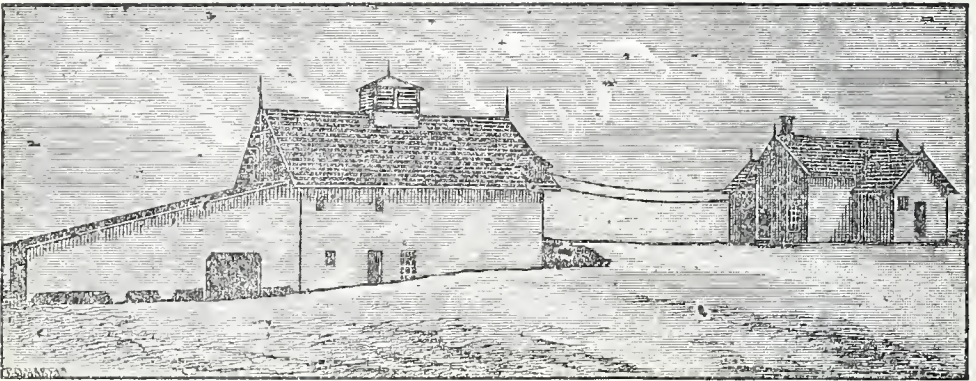
The functions of the Station are two-fold : First, as a Fertilizer Control Station ; second, as an Agricultural Experiment Station in the broadest sense of the word.

North Carolina has always shown herself to be a pioneer in new works, and is always in the first rank in the establishment of new institutions for the advancement of her interests. She established the first Agricultural Experiment Station in the Southern States, and the *second* in the broad expanse of America. The Station which thus came into existence in 1877 was a portion of the North Carolina Department of Agriculture. Its first work was in the control of the fertilizer trade by a chemical analysis of the fertilizing ingredients offered for sale in the State, thus preventing fraud and forcing manufacturers to furnish the materials they claim to sell. It continues to occupy this position for the protection of all classes of farmers and other buyers, and it is safe to say that in the fourteen years of its existence it has saved the farmers of the State many millions of dollars by preventing the sale of adulterated and worthless fertilizers. In the early years of its life the chemical investigation was its main work. Besides analyzing fertilizers it also examined, free of charge, hundreds of samples of marls, mucks, soils, cotton seed products, tobacco products, phosphates, waters, home-made composts and miscellaneous fertilizing ingredients, chemicals, etc. It printed and spread broadcast hundreds of thousands of its publications, giving information on almost every subject connected with agriculture, among which especially were formulas for composts and home-made fertilizers and the utilization of waste products. It thoroughly examined the natural phosphate deposits of the State, the pyrite deposits, the bye products of the rice industry, the cotton and tobacco products, the possibility of the jute industry for North Carolina, the sorghum and sugar beet industry, the investigation of horn, leather and wool waste, of phosphate floats, of soja bean, and various forage plants, and others just as important.

Later on an Experimental Farm was added to the agencies at work at the Experiment Station. Then a State Weather Service was organized by the Station, and the various benefits resulting from it, such as the foreknowledge of frosts and cold waves, and weather indications, were gained to the State.

During this time the Experiment Station was supported by the State from funds derived from the fertilizer tax. In 1887, however, the United States Congress passed the Hatch Act, which appropriated money from the General Government for the support of Experiment Stations in every State and Territory. It should be gratifying to all to

know that the Station (except amount required for the fertilizer control) is steadily working for the benefit of the agriculture of the State without the expenditure of a single cent of the State's resources, either directly or indirectly, for its support. With the coming of the government funds the scope of the work was greatly enlarged. There are now in operation in the Station the divisions of Chemistry, Agriculture,

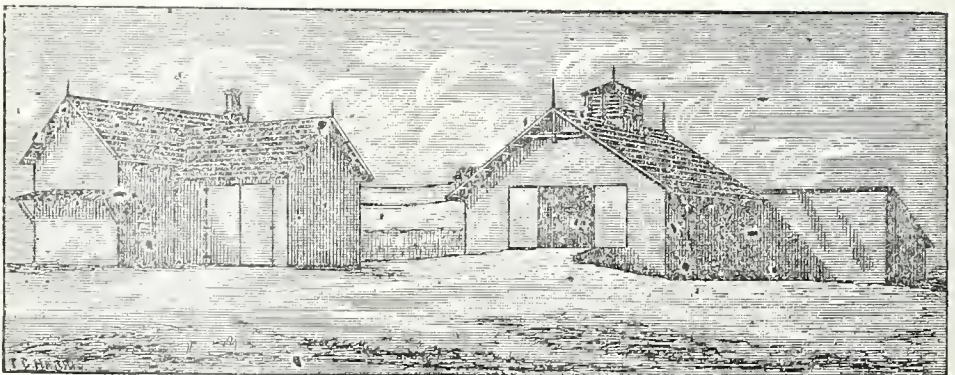


STABLES AND DAIRY BUILDINGS—FIG. 1.

Botany, Entomology, Horticulture, Meteorology, and on its staff are both scientific and practical men, trained experts who have had ample experience both in the science and practice of agriculture.

The various divisions at present belonging to the Station, and some of the work which is being done in them, are as follows:

1. *Chemical Division*—including all chemical work of the Station—the fertilizer control, the analyses of milk, butter, food and fodders, marls, phosphates, mucks, soils, chemicals, waters, etc., too numerous to mention.



STABLES AND DAIRY BUILDINGS—FIG. 2.

2. *Agricultural Division*.—Embraces work done in the field, stable, and dairy—in testing the various fertilizing ingredients on different

crops; the varieties of wheat, oats, cotton and corn, grasses, clovers and other forage plants. By actual feeding tests to ascertain the value of fodders and grass, ensilage, cotton-seed products for fattening purposes, the digestibility of different food stuffs, and profitable feeding. In the dairy work various implements are tested, improved methods tried, and in general to extend the dairy industry throughout the State, recognizing that the judicious keeping of stock is the salvation of our people.

3. *Coöperative Experiments*.—To reach as many soils as possible, and to disseminate knowledge of the work, coöperative field tests have been instituted in various localities in the State. Here are tested, on the various soils represented, the various fertilizing ingredients on different crops, different varieties of field and garden crops, fruits, grapes, and in general, in conjunction with the Central Station at Raleigh, to conduct work which may be helpful to those localities.

4. *Botanical Division*.—Tests the purity and vitality of field and garden seeds, grasses and clover, identifies plants and ascertains their value, examines diseases of plants and investigates the best remedies; disseminates practical information on the best agricultural grasses and their culture, on the most troublesome weeds and how to eradicate them.

5. *Entomological Division*.—Studies the various insect pests which infest the field, orchard and garden crops, and suggests remedies and methods of extermination.

6. *Horticultural Division*.—Investigates the different varieties of fruits and vegetables, and their adaptability to our soils and climates, also the methods for cultivation, gathering and shipment to markets; originates and improves new and promising varieties which may become valuable to the State.

7. *Meteorological Division*.—Embraces the State Weather Service, operating in conjunction with the Weather Bureau of the United States Department of Agriculture. Collects meteorological data from over the State, and preserves it for permanent record. Telegrams giving forecasts of weather for the following day are distributed; also cold wave and frost warnings for the protection of fruit, tobacco and trucking interests. A weekly bulletin, showing the effect of the weather on the crops, is issued during the growing season.

8. *Bureau of Information*.—Correspondence is invited on all subjects connected with agriculture, both scientifically and practically. The staff of the Station is at all times ready to reply promptly, and give the proper information wherever possible.

9. *Division of Publications*.—The Experiment Station issues numerous publications, including bulletins and annual reports, which are sent free to all who request them. The matter printed in them is presented

in as plain and practical a style as possible, avoiding technicalities and unnecessary words. The bulletins are issued only when the material on hand justifies it—averring once in about five or six weeks. Over 13,000 farmers and others now receive them. The following are some of the subjects treated, and occupying, each issue, from 8 to 96 pages: Compost formulas, seed tests, stock feeding on scientific principles, coöperative field tests, Indian corn, farm and dairy buildings, weed pests of the farm (illustrated), cotton-seed meal and hulls as a stock feed, hill-side ditching, some injurious insects, value of pea-vine manuring for wheat, facts for farmers, onion and celery culture, late crops of Irish potatoes in the South, tobacco curing by the leaf cure on wire and the stalk processes, &c.

The chemical laboratories and the city offices of the Station occupy the entire first floor of the right wing of the Agricultural Building, Raleigh. In this building also are located the botanical and entomological laboratory, and the rooms of the meteorological division constituting the Weather Service. Upon the roof are the meteorological instruments for recording velocity of wind, temperatures, direction of wind, &c., as well as signal flags to disseminate the weather forecasts. The Experimental Farm, on which are the Experimental barn, stable, dairy-house, plant-house (see illustration), is located adjoining the State Fair Grounds and in close proximity to the grounds of the Agricultural College.

ORPHANAGES

May be regarded as public institutions, in connection with those devoted to charity previously considered; for two of them, at least, are aided by appropriations from the State Treasury, and the omission of the others devoted to the same generous purpose, while perhaps technically right, would not be morally just; because the relief of the orphan and his equipment for future usefulness and respectability is as much the expression of the sentiment of the people through the church as through legislation, and in that view all the Orphanages become public institutions.

THE OXFORD ORPHAN ASYLUM is the first of these established in the State, and was organized and equipped at Oxford, Granville County, but not originally in its present effective and useful character. The Orphanage is the successor of St. John's College, established by the Masonic Fraternity of North Carolina before the war, and in its management and career the subject of two financial disasters; to avoid the recurrence of which, on the motion of Mr. John H. Mills, the College

was converted into an Orphanage. At that time the poverty of the country was extreme, and, as one of the results of the war, the number of orphans very great. The change of character of the institution assured its inmates food, raiment and lodging, instruction and training and equipment, mentally and physically, for future self-support. The institution was largely kept alive by appeals to public aid and generosity, until its importance and the obligation resting upon the State for the public charge and care of such an ever-present body of helpless unfortunates so impressed itself upon the intelligence and conscience of the people as to make the demand upon the Legislature for material aid irresistible. The State now appropriates annually from the Treasury \$10,000, but the management is retained in the hands of the Masons.

The Orphanage occupies the buildings and capacious grounds of St. John's College; and farm work, mechanical trades, printing, &c., together with the plainer branches of learning, are taught the boys, and also the girls, to whose course of instruction is added needle-work, housekeeping and domestic duties; and thus every year a large number of both sexes are sent forth to earn their own living, fortified with good characters and efficient training.

THE THOMASVILLE ORPHANAGE is near Thomasville, Davidson County, and is under the patronage of the denomination of Baptists. It is under the immediate supervision of Mr. John H. Mills, the founder of the preceding. The Orphanage occupies a number of well-built detached buildings, separated as a safeguard against general conflagration, and for the security of health. Grounds of one hundred acres or more surround the buildings, and are cultivated by the male pupils to the extent of materially aiding in the maintenance of the Orphanage.

THE THOMPSON ORPHANAGE, at Charlotte, is maintained by the Episcopalians, occupies ample grounds, and is equipped with all necessary buildings. It is supported by private contributions or collections in the churches, and its general objects are the same in relation to the orphans as rule in the Oxford Asylum.

THE PRESBYTERIAN ORPHANAGE, at the Barium Springs, in Iredell County, that the denomination of Presbyterians might care for its own helpless. Unfortunately the buildings were not long since burned, and have not yet been replaced, though preparations for doing so are in progress.

THE ODD FELLOWS ORPHANAGE is located at Goldsboro, and was opened on the 10th of May, 1892. As its name implies, it is under the auspices of the Odd Fellows of North Carolina, and is designed for the care and education of children of deceased members of the Order. Children of

both sexes are received. Thus far the children are instructed only in the plainer branches of education, but will be in time subjected to a system of industrial as well as intellectual training to qualify them for the duties of after life.

The buildings of the institution are good and substantial, and twenty acres of ground are included in the property. The citizens of Goldsboro contributed liberally to the establishment of the Orphanage, which is maintained by an annual appropriation from the Grand Lodge of \$3,500, and also by appropriations from other Lodges of the State and from individuals.

The Orphanage is under the management of Dr. W. C. Whitfield, of Wayne County.

THE COLORED BAPTIST ASYLUM was established at Oxford by the colored Baptist denomination of the State, though pupils from other denominations are received and cared for on equal terms. The objects and systems are similar to this in the other Orphanages.

This institution has an annual appropriation from the State Treasury in aid of its private resources.

BUREAU OF LABOR STATISTICS.

As a part of the machinery of the Department of Agriculture, Immigration and Statistics, at the session of the General Assembly of 1887 was established the Bureau of Labor Statistics, under the supervision of a Commissioner, to be appointed by the Governor, who holds his office for two years at an annual salary of \$1,500. His duties are defined by the Act, as follows:

He shall collect information upon the subject of labor, its relation to capital, the hours of labor, the earnings of laboring men and women, their educational, moral and financial condition and the best means of promoting their mental, material, social and moral prosperity. He shall also make a full report to each session of the General Assembly of the information collected and collated by him and containing such recommendations as he may deem calculated to promote the efficiency of the bureau. The Commissioner is hereby directed to endeavor to obtain an accurate list of all the newspapers published in the State, and whether the same be published daily or weekly, and to forward to each and all a copy of his report promptly upon its being published; he is also directed to diligently enquire after the labor organizations of the State and see that none are omitted in the distribution of the reports; he is further directed to confine his labors to this State.

The Bureau is in active existence, discharging its functions industriously and usefully. Mr. John C. Scarborough is Commissioner, and Mr. W. S. Harris Chief Clerk.



ROUND KNOB AND FOUNTAIN.

THE GEOLOGICAL MUSEUM,

In the building of the Agricultural Department, presents an admirable epitome of the resources, the progress and the characteristics of North Carolina, collected and displayed so as to gratify the pride of the people and stimulate to further effort, and also fully to inform the inquiring visitor from other States and countries. Everything that is the product of land and water on the surface and under the surface, the precious metals and the baser metals, the gold, the iron, the copper, the coal, the marl, the phosphates, the marbles, the building-stones, together with the gems which sparkle in her diadem; and the woods, ornamental and useful, and the grains, and all else that illustrate the richness of the land; and the fishes and the great whale that tell of the wealth of the waters—all these eloquently speak to the North Carolinian the great store our State has laid up for him who has the patience and the intelligence to dig it out from its hidden depositories.

Mr. T. C. Harris is the Curator of the Museum.

RAILROAD COMMISSION.

By an act of the General Assembly of North Carolina, ratified March 5, 1891, a Railroad Commission was created, consisting of three members, to be elected by the Legislature, charged with the general supervision of railroads, steamboat and canal companies, and express and telegraph companies doing business in North Carolina, restraining on the part of railroad and other public transportation companies the exaction of more than a reasonable compensation for the carriage of freight or passengers, under penalty of fine, to be adjudged sufficient under conviction for extortion; and also empowering the Commission with authority to forbid such companies to give undue preference to patrons of their lines, and authorizing it to make rates for freight and passenger tariffs, forbidding unjust discriminations, giving rebates, and the charging more for short hauls: empowering it to make special excursion rates, empowers it to fix the charges for the transportation of passengers and freight, to make schedules that shall meet the general public convenience, and take such other steps and do such other acts as shall conduce to the protection of the business and travelling public from oppression and injustice, allegations of which induced the creation of the Commission. The same principles that govern railroad and other transportation management are made to apply also to telegraph and express companies.

The Commission consists at present of J. W. Wilson, chairman, and T. W. Mason and E. C. Beddingfield, and its sittings are held in Raleigh

PUBLIC BUILDINGS.

The necessity for such suitable places at the State Capital for the decent and convenient conduct of the public business was so apparent, that in the course of the existence of the State government, with Raleigh as its seat and centre, all the public buildings required have been constructed, and in a style suited to the dignity and character of the State.

THE STATE CAPITOL, begun in 1832 to replace its predecessor destroyed by fire June 27, 1831, was completed and made ready for occupation in 1840. It is a massive granite structure, in plain but impressive doric style, and for many years was regarded as the finest of all the State Capitols. It is situated in a square of four acres, laid off in broad and convenient walks, shaded in part by native oaks, survivors of the original forests, and with other trees illustrating very interestingly the variety and character of North Carolina forestry; and it is also adorned with flowers and shrubbery. The building contains the Legislative Halls, the Executive offices, the Treasury Department, the Auditor's office, those of the Secretary of State, the rooms of the Keeper of the Capitol, Legislative Committee rooms, and other needed apartments, is lighted both by gas and electricity, is well ventilated, and in winter is thoroughly heated throughout by steam. The whole is surrounded by a handsome iron fence, based upon a solid dressed granite foundation.

THE GOVERNOR'S MANSION, recently completed, and first occupied by his Excellency Daniel G. Fowle, is situated in the north-eastern part of the city on one of the public squares originally reserved to the State in the plan of Raleigh. It is a three-story brick structure, elegant in design, and complete in all its details, pleasing in exterior, elegant, convenient and comfortable in the interior. In its construction much of the beautiful flesh-colored marble from the Nantahala river in Macon County was used, illustrating the value and beauty of that superb material.

THE SUPREME COURT AND STATE LIBRARY BUILDING is situated on the north side of Edenton street, adjoining the Agricultural Building and fronting Capitol Square. It has an unpretending exterior, but is well built and well arranged for its various uses. It is three stories high, and contains the Supreme Court room, consulting rooms, the Attorney General's office, the office of the Superintendent of Public Instruction, the Supreme Court Library, which contains, besides a large and valuable collection of law volumes, portraits of many of the members of the Court from its organization to the present time; and also

the State Library of 45,000 volumes, and portraits of eminent North Carolinians prominent in State annals, in professional, civil and military and naval life. To these buildings are to be added those of the charitable and penal institutions before mentioned, all of which are large, imposing and costly structures.

EDUCATION.

The good name, as well as the substantial prosperity of a State, is indissolubly associated with, and dependent upon, the initial direction given to the minds of the young. Care on the one hand, neglect on the other, bring forth responsive fruit, to tell in after years in the grateful form of public virtue and enlightenment, or in the melancholy spectacle of public vice or popular ignorance and abasement. The wisdom of statesmanship, is never so wisely directed as when it aims to establish the one and guard against the other. And such statesmanship knows that it must act always by anticipation; knows that it is dealing with functions in a state of constant change and progression; that it is moulding and shaping that which, though incorporeal and intangible, bears direct analogy to that which is corporeal and material, in that it is impressible to good or to evil, retains the shape and form to which it is moulded, and, in its matured powers, presents the perfection of the wise directing hand, or the distortion of neglect or of wicked design.

The solicitude of our Revolutionary fathers was never allayed, even amid the clash of arms and the uncertainties of a pending desperate strife, until they had given expression in their tentative efforts in the formation of a new government to the purpose which was uppermost in their minds. Never in human history did a solemn determination to discharge a duty, apparently altogether irrelevant to the cause they then had in hand—the conduct of war and the achievement of liberty—have expression so noble, so wise, so disinterested. Liberty might be won, but at ruinous cost; but whatever befell, posterity must be educated. That was a sacred charge not to be neglected or evaded. It was the education of the leaders in the cause of liberty that had taught the value of liberty; it was essential that that liberty when assured should be preserved by the same means that had demonstrated its value. Therefore, posterity must be educated; and while the enemy were still thundering at the gates, and while the roar of battle was still deafening the startled ear, calmly, unmoved by the awful commotion, brave as to their present, confident as to their future, they decreed in their

first Constitution "that a school or schools should be established by the Legislature for the convenient instruction of youth, with such salaries to the masters, paid by the public, as may enable them to instruct at low prices; and all useful learning shall be encouraged in one or more universities."

Such was the beginning of our school system; such was the mandatory obligation and formation of the State University.

Public financial confusion, general private pecuniary distress, materially delayed action upon the wise determination of the founders of our State government. Yet, under all untoward circumstances, the University was chartered in 1786, and entered upon its work in 1795. It lit the torch of public education, if at the time it could do no more. Its own career grandly illustrated its own usefulness. Its example and its influence kept alive that broader ultimate plan and purpose of an education to be brought to every child in the land. The first step was taken by Judge Murphey in the session of the Legislature of 1816, in a report urging the establishment of a judicious system of public education. But no further legislative action on the subject was taken until the session of 1825, in which year a fund for the establishment of common schools was created by the General Assembly, "consisting of the dividends arising from the stocks then held or afterwards acquired by the State in the banks of New Berne and Cape Fear, the dividends arising from the stocks owned by the State in the Cape Fear Navigation Company, the Roanoke Navigation Company, and the Clubfoot and Harlowe Creek Canal Company, the tax imposed by law on license to retailers of spirituous liquors and auctioneers, the unexpended balance of the agricultural fund, all moneys paid to the State for the entries of vacant land, and all the vacant and unappropriated swamp lands of the State, together with such sums of money as the State may find it convenient to appropriate from time to time."

In 1789, the Legislature in session in Fayetteville, by anticipation, had cut off by far the largest resources applicable to the school fund. The largest body of vacant land then owned by the State included all the territory of the present State of Tennessee. But as a heavy debt rested upon the National Government for the costs of the Revolutionary War, Congress had frequently urged upon the States owning western territory the policy of ceding the whole or part of such territory to aid in the extinguishment of such debt. North Carolina, with responsive generosity, gave up the territory of Tennessee, with all her prospective school lands, and fell back upon her other resources and the relief or aids of future legislation.

Such legislation was had, and by the transfer to the Literary Fund by the General Government in 1837 of the State's share of the surplus deposit fund, this increased the Literary Fund to \$2,000,000 and upwards. The common school system, as it was designated, was adopted by popular vote in 1839, and continued in force until superceded by the results of the war. Under that system, in 1850 the number of schools was 2,657; of teachers, 2,730; of pupils, 104,095. The income, being in that year \$158,564, increased in 1860 to \$268,719.

As a result of the war, the whole Literary Fund was lost, and new provision had to be made.

Without going into details involving the legislation of several years, it is enough here to say that in 1890, from the general poll-tax, general property tax (12½ cents on the \$100), special poll-tax, special property tax, special property tax under local acts, special poll-tax under local acts, fines, forfeitures and penalties, liquor licenses, auctioneers, estrays and other sources, all of which are specially applied to the school fund, and from the State Board of Education, there was realized the sum of \$721,756 38, as against the receipts for 1884 of \$580,311.06; and for 1890 the expenditures were \$718,225.60.

The school census for 1890 shows the number of persons between 6 and 21 years of age to have been—white males, 190,423; white females, 179,721; total, 370,144; colored males, 108,707; colored females, 107,817; total, 216,524; of which there was an enrollment of—white males, 107,073; white females, 98,771; total, 205,844; and of colored males, 55,455; colored females, 61,234; total, 116,689. The average attendance during the same time was, for whites, 134,108; for colored, 68,992. Average length of school terms, for whites, 11.85; colored, 11.81. Average salary of teachers—white males, \$25.80; white females, \$22.95; colored males, \$22.72; colored females, \$20.36.

The value of public school property in 1890, for whites, was \$612,303.51; for colored, \$240,402.60. The number of public school-houses in the same year was, for whites, 3,973; for colored, 1,820. Number of schools taught in same period, for whites, 4,508; colored, 2,327. Number of school districts, for whites, 4,893; for colored, 2,289. And the statistics of the Normal Schools for 1890, for the colored race, show an attendance at Fayetteville of 145, at Salisbury of 119, at Franklinton of 275, at Plymouth of 123, and at Goldsboro of 115—an increase over the previous year of 58.

For the fiscal year ending November 30, 1890, there had been levied for school purposes on white polls \$229,994.32, and on colored polls \$90,420. On general property there had been levied on the whites \$283,953.31, and on colored \$8,735.24.

The population of North Carolina by the census of 1890 is—white, 1,049,191; colored, 567,170; all others, 1,586—a total of 1,617,947, the colored population being a little more than one-third of the whole. In the contribution to the support of the schools, the whites contribute nearly five-sixths of the whole, and the colored little more than one-sixth. Nevertheless, the appropriation is made rigidly *pro rata*, as if the contribution had been on the same basis.

Besides the levy, which is now 15 cents on the \$100 worth of property, and the other subjects upon which taxation is laid for the benefit of the public schools, the State has received large benefactions from the Peabody Fund, appropriated in aid of public, normal and graded schools and to holders of scholarships in the Nashville Normal School. There are fourteen of these scholarships, each worth \$200 per annum. The average annual appropriations to the State from this fund since 1868 have been about \$4,500.

The present public school system exists under that feature of the State Constitution providing for a State Board of Education, consisting of the Governor, Secretary of State, Treasurer, Auditor, Attorney General, and Superintendent of Public Instruction. The latter is the head of the system of public schools. Each county has its County Board and County Superintendent. The County Board consists of those men elected by the Commissioners and Justices of the county, and the Board, in conjunction with the Commissioners and Magistrates, elect the Superintendent. The normal system was adopted in 1885, for the whites as well as for the colored people, and eight normal schools were established for the former and five for the latter. The county institute system has superseded the white normal schools, except that a normal department is provided by the University. The five colored normal schools are still continued.

It need scarcely be added that while the provision for the schools of both races is made with strictly impartial appropriation of the public funds, the schools themselves are separate; and a still further separation is made in the schools of the Croatan Indians of Robeson County, which are detached from both the white and colored schools.

HIGHER EDUCATION.

THE UNIVERSITY OF NORTH CAROLINA.—Under the mandate of the Constitution, requiring the establishment of common schools, and also of one or more universities, on December 11, 1789, the Legislature decreed the existence of the University of North Carolina, by a Board of Cor-

porators selected from among the most earnest and intelligent friends of education, to be located at a point to be selected from among those suggested as the most eligible in the counties of Wake, Franklin, Warren, Orange, Granville, Chatham and Johnston. The place called New Hope Chapel Hill, in the county of Orange, was accepted—1,180 acres of suitable territory having been offered by the citizens of that vicinity; and here the village of Chapel Hill was laid off, the first lots sold, and the corner-stone of the old East building was laid on the 12th day of December, 1793, and the institution was opened in 1795.

The institution has now approached the lofty elevation originally designed—that of a University—having passed beyond the confined limits of a college with its limited curriculum. It now gives instruction not only in the former prescribed course, but has expanded into the addition of all the liberal and scientific branches. The course of study embraces political and social science, history, English, Greek, Latin, modern languages, mental and moral science, mathematics, engineering, chemistry, natural philosophy, biology, mineralogy and geology. There are also special schools for law and medicine. Five special courses of study leading to degrees are arranged for the benefit of those who desire thorough general education. Special short courses may be adopted in connection with preparation for the study of medicine, for business, agriculture, teaching, law or journalism. Free instruction is given in all departments to graduates of other colleges and universities.

The Faculty was a full one at the Commencement, June, 1892, consisting of George Taylor Winston, LL. D., President and Professor of Political and Social Science; Kemp Plummer Battle, LL. D., Professor of History; Francis Preston Venable, Ph. D., Professor of General and Analytical Chemistry; Joseph Austin Holmes, B. S., Professor of Geology and Mineralogy; John Manning, LL. D., Professor of Law; Thomas Hume, D. D., LL. D., Professor of English Language and Literature; Walter Dallam Toy, Professor of Modern Languages; Eben Alexander, Professor of Greek Language and Literature; William Cain, C. E., Professor of Mathematics and Engineering; Richard Henry Whitehead, M. D., Professor of Anatomy, Physiology and Materia Medica; Henry Horace Williams, A. M., B. D., Professor of Mental and Moral Science; Henry Van Peters Wilson, Ph. D., Professor of Biology; Karl Pomeroy Harrison, A. M., Professor of Latin Language and Literature; and the following instructors and assistants: Hunter Lee Harris, B. S., instructor in Mineralogy and Geology; Howard Burton Shaw, A. B., B. E., instructor in Mathematics and Drawing; Charles Baskerville, assistant

in Chemical Laboratory; Howard A. Banks, A. B., instructor in English; Arthur J. Edwards, assistant in Chemical Laboratory; Thomas R. Foust, assistant in Physical Laboratory.

The University is sustained by an annual appropriation by the State of \$20,000: by the annual charge, \$77.50 per capita for tuition, and is aided by the Deems Fund, which is designed to assist needy students by loans; by the Francis Jones Smith Fund, the income of which is applied to the education of such students as the Faculty may designate; by the B. F. Moore scholarship, by the Cameron scholarship, by the Alumni scholarship, and by the Mary Ann Smith scholarships.

Free tuition is also offered to candidates for the ministry, to the sons of ministers, to young men under bodily infirmity, and to young men preparing to teach.

DENOMINATIONAL COLLEGES.

The leading denominations of North Carolina, in their desire and purpose to give special advantages to their young men preparing to engage in the ministry, by equipping them with all the advantages of education, more within the limits of denominational lines than elsewhere attainable, made early efforts to establish colleges under their own control. Thus Wake Forest College, Davidson College and Trinity College came successively into existence, the educational representations respectively of the Baptist, the Presbyterian and the Methodist denominations.

WAKE FOREST COLLEGE was chartered at the session of the General Assembly of 1833. A tract of land containing 615 acres, twelve miles north of Raleigh, at the point now known as Wake Forest, was purchased, and the erection of buildings begun, and the institution opened on the first Monday of February, 1834.

The system first adopted, which was that of manual labor, associated with the ordinary college curriculum, was soon abandoned as impracticable and unproductive of satisfactory results, and the collegiate system only retained. Laboring under the embarrassments of debt in the early years of its existence, it was at length relieved in 1849. Since that period, by the earnest and liberal zeal of prominent members of the Baptist church, an endowment fund has been accumulated, now amounting to \$194,000. In the number, excellence and elegance of the college buildings, Wake Forest is the equal of any like institution in the country.



UNIVERSITY OF NORTH CAROLINA.
Showing some of the Ten Buildings.

The standard of scholarship is high, and the graduates number among them very many prominent men, not only in the pulpit, but in all the learned professions and in business and industrial avocations.

The Faculty now consists of C. E. Taylor, B. Lit., D.D., President, Professor Moral Philosophy and Political Science; W. B. Royall, M. A., D.D., Professor of Greek; L. R. Mills, M. A., Professor of Pure Mathematics; W. Royall, M. A., D.D., Professor of English; B. F. Sledd, M. A., Professor Natural History; C. E. Brewer, M. A., Professor of Chemistry; G. W. Greene, B. A., Professor of Latin; J. F. Lanneau, M. A., Professor of Physics and Applied Mathematics; E. G. Beckwith, Assistant Professor of Mathematics; J. B. Carlyle, M. A., Assistant Professor of Languages; T. S. Sprinkle, B. S., Director of Physical Culture. The number of students 1891-'2 was 211.

Ministers receive free tuition. All those of their class who have been licensed to preach and are unable to command the means necessary to defray the cost of board, may receive aid for this purpose from the Board of Education of the Baptist State Convention, so far as the means may be at its disposal. Among the other aids to indigent young men, is the "Bostwick Loan Fund," created by Mr. J. A. Bostwick, of New York City, who has given to the College one hundred and twenty shares of \$100 each, 12 per cent. stock, in the Standard Oil Trust Stock, to be held in perpetuity, the annual interest, at present \$1,440, to be used in making loans to students to pay their tuition bills, and nothing else, to be loaned at 4 per cent., payable semi-annually, on terms agreed upon.

The North Carolina Baptist Students' Loan Association, incorporated March, 1877, lends money arising from the interest of its invested fund to indigent young men wishing to study in the College, the loan to be repaid with interest after the completion of the course.

DAVIDSON COLLEGE, the Presbyterian institution of higher learning, may be regarded as the legitimate, if somewhat remote, successor to Queen's College, or Liberty Hall, as it was called after Royal recognition of the former had been denied. After many efforts at revival, and against strong opposition to the creation of a distinctly denominational college, Concord Presbytery, in the spring of 1835, adopted resolutions looking to the establishment of a Presbyterian College in their Presbytery; and in the fall of the same year a site was selected in the northern part of Mecklenburg County, at which has been called the literary and geographical centre of the State. William Lee Davidson, a son of the Revolutionary hero, Gen. William Davidson, donated the building site, together with a large tract of land and other valuable gifts. The institution was named in honor of General Davidson.

The College was opened in March, 1837, with 66 students. A charter was granted by the Legislature in 1838. The manual labor system was at first adopted, but, as at Wake Forest, it proved a failure and was abandoned. In 1855, Maxwell Chambers, Esq., of Salisbury, made the munificent bequest of \$258,000 to the College, and this relieved it of all existing financial trouble and assured its future freedom from embarrassment. The terms of the charter limited the endowment to \$200,000, and only that amount could be realized from the bequest. About \$100,000 of this endowment was lost by reason of the war. In addition to the proceeds arising from the interest of this endowment, the College has endowed scholarships, such as the Maxwell Chambers scholarship of \$3,000, endowed by the Presbyterian Church of Salisbury; the D. A. Davis scholarship of \$1,500, endowed by the same church; the George Brown scholarship of \$1,000, endowed by Mrs. A. C. Davis, of Salisbury, and the Thomas Brown scholarship of \$1,000, endowed by Brown Bros., of Winston, and one of \$500, endowed by Gen. Rufus Barringer and Mr. George E. Wilson, of Charlotte.

Two regular courses of study, leading to the degrees of Bachelor of Arts and Bachelor of Science, each requiring four years, are provided. The requirements for admission are much the same as at the State University. A post-graduate course, leading to the degree of Master of Arts, is available. The course of instruction is thorough, and many distinguished men of the State are alumni of the institution.

The Faculty numbers eight professors. The Rev. John Bunyan Shearer, D.D., LL.D., is now President.

TRINITY COLLEGE.—The leading Methodist College of North Carolina is the outgrowth of the Grammar School established by the Rev. Brantley York in 1838, in the north-west corner of Randolph County, five miles south of the town of High Point, on the North Carolina Railroad, and about one hundred miles west of Raleigh. In 1842 Dr. York resigned the charge of the school, and the Rev. B. Craven, then only nineteen years old, was elected as successor. In 1851 the school was re-chartered and the name changed to "Normal College." By this charter the school was brought under State supervision, and the Governor of the State became *ex officio* President of the Board of Trustees, and the Superintendent of Common Schools Secretary. The object of this connection was to secure a higher grade of teachers for the common schools; and, by a provision of the charter, a certificate from the Normal College was made ample lawful evidence of qualification to teach in such schools. At the annual session of the North Carolina Conference of the Methodist Church, held in Salisbury in 1851, the connec-

tion between the school and the Conference was adopted, and the Trustees of the College agreed that young men preparing for the ministry should be educated without charge. In 1853 the charter was amended, and the College was authorized to confer degrees. In 1858-'9 the management of the institution was transferred to the North Carolina Conference of the Methodist Episcopal Church, South, and by act of the Legislature the College was vested in the Conference with all the rights and privileges usually granted in such cases, and the name was changed from Normal to Trinity College. The College suffered from the effects of the war, and in 1865, for a short time, exercises were suspended. Dr. Craven, in that year, was re-elected President, and the next year exercises were resumed. In 1882 Dr. Craven died, with disastrous influence on the fortunes of the institution, which fell so low as to threaten its existence. Prominent laymen came to the rescue, and its strength was renewed, its curriculum broadened, its scholastic standard raised, and it took rank with the other colleges of the South.

In 1890, in accordance with the order of the Board of Trustees of the College, of the North Carolina and of the Western North Carolina Conference Methodist Episcopal Church, South, and of the General Assembly, amending the charter, the institution was ordered to be removed to Durham, where Blackwell's Park, consisting of sixty-two and a half acres of eligibly situated land, was secured as a site for the buildings and grounds. Liberal donations made by citizens of Durham, and other munificent aid, have enabled the management to proceed so rapidly with the construction of the necessary buildings that the session of 1892-'3 will be opened at Durham. These buildings consist of the Main College, the Technological building, the College Inn, the Gymnasium buildings and seven residences for the Faculty and officers, altogether constituting a mass of well constructed and architecturally imposing edifices. The grounds are well laid off, and the whole is an independent municipal corporation, with its own mayor, commissioners and peace officer.

At present, the institution has eleven chairs of instruction and six assistant instructors, distributed among the several departments of instruction into which the work of the College is divided. The work of instruction is organized under the following departments, viz.: The Department of Philosophy and Letters; the Scientific Department; the Technological Department; the Department of History, Political and Social Science; the Theological Department; the Law Department; and the Commercial Department.

The College fees for the session are \$60; board and incidentals, \$95 to \$140; commencement tax, \$2.50; total, \$157.50 to \$202.50.

John Franklin Crowell, A. B., Dr. Litt., is now President.

Among the other denominational colleges is Elon College, in Alamance County, on the line of the North Carolina Railroad, near Gibsonville Station. It is an institution founded by the Christian Church. It is for both sexes, and has a good attendance. It is equipped with large and well constructed buildings, and is a valuable auxiliary to the cause of education.

SECONDARY INSTRUCTION.

Under this title is to be named the class of schools preparatory in their course, but so broad and thorough in their aims as, in a large number of cases, to meet all needed requirements of education. At the head of these is—

THE BINGHAM SCHOOL, established in 1793 by the Rev. William Bingham, a native of Ireland, at Pittsboro. The School, in its succession through three generations of the same name and family, has long been pre-eminent in the South, and noted throughout the whole Union. Mr. Bingham, for five years, from 1801 to 1805, was Professor of Latin in the State University, and then resigned to re-open his School at Hillsboro. At his death, in 1826, he was succeeded by his eldest son, William J. Bingham, who continued it for twenty years at Hillsboro, with a reputation that brought him pupils from all parts of North Carolina and from all the Southern States. Subsequently the School was removed to Oaks, in Orange County, where the Principal was assisted by his sons William and Robert Bingham, both graduates of the University. On the death of the elder Bingham, the School was removed to a point near Mebanesville, in the same county. William Bingham soon after died, and was succeeded by his brother Robert, by whom the institution was still conducted. In addition to thorough classical and English and business education, since the war the military feature has been added, an officer of the United States Army having been detailed as commandant of the cadets. Owing to the destruction of a portion of the School buildings by two successive fires, Major Robert Bingham was induced by favorable offers to remove the School to Asheville, where it now is, without abatement of its usefulness or reputation.

THE HORNER SCHOOL was established in Oxford in 1851 by James H. Horner. The course of instruction is thorough, embracing the classical, mathematical, scientific and military features. Each course is arranged

for four years. The classical course embraces the studies in the schools of Latin, Greek, Mathematics, English Grammar and Rhetoric, Geography and History. The Scientific and English course embraces Mathematics, Natural Science, Metaphysics, English Grammar and Rhetoric, Geography, History.

French, German and Bookkeeping are elective studies. The School is strictly military in its organization and merit.

THE DAVIS SCHOOL is a classical and military School, established at LaGrange, Lenoir County, in 1861, by Col. A. C. Davis. It soon commanded extensive patronage and acquired wide celebrity. In many respects it is modelled after the Bingham School, but adopting at its foundation the military feature. Causes not necessary to refer to, suggested the wisdom of the removal of the institution to some other point. Eligible places with liberal offers by citizens were made, and Winston was selected, land acquired, commodious buildings erected, and in 1890 the School transferred to the new location where it prospers beyond anticipation, the cadets numbering annually about 225

PRIVATE SCHOOLS AND COLLEGES.

Many institutions in North Carolina, ranked in the reports of the Superintendent of Public Instruction under the above title, have merit sufficient to advance them into the class of colleges, but, being placed under the supervision of the public school authorities, can be considered only as they are above entitled. There are so many of them that they can only here be referred to briefly.

Among them are Holt's School, Graham College and Oakdale Academy, all at Burlington, Alamance County, all for both sexes, for whites, and Yadkin Academy, for colored, at Mebanesville; Weaverville College, Weaverville, Buncombe County, for whites and for both sexes; Ravenscroft High School, Asheville, whites, male; Rutherford College, near Connelly's Springs, Burke County, whites, male; Catawba College, Newton, Catawba County, whites, both sexes; Concordia College, Connor, Catawba County, whites, both sexes; Thompson School, Siler City, Chatham County, whites, both sexes; Hayesville Male and Female College, Hayesville, Clay County, whites; Colored Presbyterian School, Fayetteville, Cumberland County, both sexes; Warsaw High School, Warsaw, Duplin County, whites, both sexes; Woodward High School, Durham, Durham County, colored, both sexes; Louisburg Female Academy, Louisburg, Franklin County, whites; Gaston College, Dallas, Gaston County, whites, female; High Classical School, Oxford,

Granville County, colored, both sexes; Oak Ridge School, Oak Ridge, Guilford County, whites, both sexes; Guilford College, Guilford County, whites, both sexes; High Point Female College, High Point, Guilford County, whites; Liberty Academy, Liberty, Randolph County, whites, both sexes; Leaksville High School, Leaksville, Rockingham County, whites, both sexes; Enochville High School, Rowan County, whites, both sexes; Monroe High School, Monroe, Union County, whites, both sexes; Kittrell Normal and Industrial School, Kittrell, Vance County, colored, both sexes; Skyland Institute, Blowing Rock, Watauga County, whites, both sexes; Moravian Falls Academy, Wilkes County, whites, both sexes; Nahunta Academy, Pinkney, Wayne County, whites, both sexes.

HIGHER FEMALE EDUCATION.

The State of North Carolina, while acting promptly, though not always munificently, upon the requirements of the Constitution to provide for the higher education of its male youth, exhibited no practical concern for that of the equally needy and deserving female youth. Only recently has the sovereign conscience been awakened, through the persistent energies of the Superintendent of Public Instruction, Major S. M. Finger, and the Normal and Industrial School established at Greensboro for the education of females in the special branches designated in the charter. The care of female education, therefore, devolved upon individual or denominational interest in the intellectual welfare and training of that sex upon whom so unävoidably depends the complexion of society, of its morals, its manners, its habits, and, as human history illustrates in innumerable instances, of its intellectual culture and its ultimate useful tendencies and results.

To this individual and denominational solicitude is due the existence of the female schools and academies which have trained and refined the generations of wives and mothers, taking their places in the social world, adding new lustre to their sex, adorning their homes with all that makes home happy, refined and useful, and giving perennial illustration of the influence of the wife and the mother upon the character, the fame and the fortunes of the husband, the son and the brother.

The first of the public female schools to be named is—

THE SALEM FEMALE ACADEMY, founded by the Moravians in 1802. There had been private schools in the State so excellent as to have drawn to them patronage from distant parts of the State, but the honor must be ascribed to the Moravians of having located the first institution of a public nature, and which now, after the lapse of ninety years, grows,

rather than loses, in usefulness and reputation, for it draws to it annual recruits from all and the most distant of the Southern and Western States, to fill the places of those sent forth to illustrate the solidity and the splendor of their mental and social equipment.

The school is regularly graded with a four-years mathematical course, with most thorough cultivation in music, painting, drawing and needle-work. A commercial course is also provided. The corps of instructors is from twenty-six to thirty. The whole number of alumnae is between six thousand and seven thousand.

For many years it was the only institution of wide repute in the South for female education. Its pupils, therefore, have been well represented in the leading families in the South. A large number of these alumnae became teachers and heads of seminaries and academies, with the best and most useful influences upon the subjects of their training.

The buildings and accommodations of this school are elegant and commodious.

ST. MARY'S SCHOOL, at Raleigh, occupies the buildings and grounds once used by the Episcopal School For Boys. They were applied to their present uses in May, 1842, when the Rev. Aldert Smedes founded the present St. Mary's School, under the auspices of the Episcopal Church in North Carolina. The exercises have been maintained continuously ever since, the son of the founder, the Rev. Bennett Smedes, succeeding to the control on the death of his father. The patronage is from this State and many of the other Southern States. The course of education is ample, embracing all the substantial branches, as well as the ornamental, to the extremest point of culture. The course is arranged for five years.

PEACE INSTITUTE is situated in the city of Raleigh, in grounds containing eight acres, and the main building, which cost \$40,000, is probably the largest and one of the best school buildings in the State. The Institute is the outgrowth of prominent men in the North Carolina Synod of the Presbyterian Church to establish at the State capital a school for young ladies, to be of high grade. When the steps were taken to establish such school, William Peace, of Raleigh, headed the subscription with \$10,000, and, in recognition of his generosity, the Institute was honored with his name. The buildings were erected before the war, but before being used as a school they were taken possession of by the Confederate Government and, during the war, used as a hospital. After the war, in 1872, Peace Institute was leased by the Rev. Dr. Burwell, D. D., and his son, John B. Burwell, and continued

under the management of father and son until recently, when it came under the management of Mr. Dinwiddie, with continued prosperity and reputation.

The average annual enrollment is about two hundred, representing a large number of Southern States. Its course of instruction embraces the following departments: Collegiate, Normal, Primary, Kindergarten, Music, and Fine Arts; and, in thoroughness, is equal to any female school in the South.

GREENSBORO FEMALE COLLEGE occupies a fine brick building in a fine natural park of forty acres in a pleasant part of Greensboro. It is a Methodist institution, the original suggestion of the Trustees of the Greensboro Female School, to the Virginia Conference of the Methodist Episcopal Church, asking that a female college under their auspices, be established at Greensboro. This was in 1837, when the North Carolina Conference had no separate existence. It acquired such the same year; and in 1838 the North Carolina Conference obtained a charter from the State Legislature. This was the first female college chartered in North Carolina, and the first south of the Potomac, except Wesleyan Female College at Macon, Ga. The institution was opened for students under the presidency of the Rev. Solomon Lea, succeeded, as the result of successive resignations, by the Rev. A. M. Shipp, D. D., the Rev. Chas. F. Deems, and the Rev. T. M. Jones. The school building was destroyed by fire in 1863, and not rebuilt until 1871. It was opened in 1873 under the presidency of the Rev. T. M. Jones, and continued under him with great success until the period of his death, which occurred in 1889, when he was succeeded by the Rev. B. F. Dixon.

A preparatory course and a collegiate course requiring four years is provided. The Faculty is a full one, and the attendance of pupils is from 150 to 200, representing several Southern and Western States.

THE CHOWAN BAPTIST FEMALE INSTITUTE is located at Murfreesboro, Hertford County. It has very fine buildings, situated on highly ornamented grounds, containing twenty-eight acres. This institution originated in the purpose of the Bertie Union Meeting (Baptist) embracing the counties of Northampton, Bertie and Hertford, to establish in their midst a high school for girls, and a school building was provided at Murfreesboro and opened October 11, 1848, with the Rev. A. McDowell, of South Carolina, and a graduate of Wake Forest College, as president. The prosperity of the institution was so rapid and so marked as demanded the erection of large buildings, and in 1851, a joint stock company took charge of the school, selected a new site and completed a large and handsome brick building. The value of the property is

now estimated at \$50,000. The funds were chiefly contributed by the Chowan Association. With its greater facilities, the institution was soon filled with young ladies from most of the Southern States, and some from the North. It has had successively as its presidents, Dr. McDowell, Rev. William Hooper, D.D., LL.D., Rev. Mr. Forney, and again Dr. McDowell, who returned to the presidency in 1862, and died in 1881, to be succeeded by Prof. John B. Brewer, the present president. In the College there are two departments, the preparatory, requiring two years for completion, and the collegiate, four years. In the latter the course is as full and satisfactory as in the other female colleges in the State.

THE OXFORD FEMALE SEMINARY is the continuation of the Raleigh Female Seminary (Baptist) established in Raleigh about 1870 by the Rev. William Royall, D.D., who, on his transfer to Wake Forest, was succeeded by Prof. F. P. Hobgood, who removed the institution to Oxford with a corresponding change of name. It has there flourished. The school grounds comprise four acres, handsomely laid out. The course of study comprises both a preparatory and a collegiate department. The Faculty consists of learned instructors in ample force and of high qualification, representing in their acquirements the University of Virginia, the Stuttgart Conservatory, the Cooper Institute, and other well known institutions.

THE ASHEVILLE FEMALE COLLEGE is a flourishing institution, originally established under the auspices of the Holston (Methodist) College. It possesses one of the finest collegiate buildings in North Carolina, situated in a grove of thirteen acres in extent almost in the centre of Asheville. It has a full corps of able instructors in the preparatory, collegiate and ornamental branches, and draws a large patronage from most of the Southern and Western States, together with a large local attendance. Prof. B. E. Atkins is at present president of the institution.

NORMAL AND INDUSTRIAL SCHOOL FOR FEMALES. The neglect by the State of its duties in relation to female education as a care of the State, as well as that of the males, was partially repaired at the session of the General Assembly at the urgent instance of the Superintendent of Public Instruction, S. M. Finger, zealously supported by members of the Legislature and endorsed by public sentiment. The act creating this institution authorized the existence of a "Normal and Industrial School for Females," for the purpose of preparing pupils for the vocation of teaching and to equip them with a practical industrial education for their future self-maintenance. To secure the construction of the school at Greensboro, the citizens of that place made a cash donation

of \$30,000 for the erection of the buildings; to which the State added \$30,000 for the same purpose. Ample large grounds were donated by R. S. Pullen and R. T. Gray, of Raleigh, and others; but the names mentioned alone appear in the deed of conveyance. Two handsome and capacious brick buildings have been constructed, and the institution is to be opened on the 28th of September, 1892.

The school is endowed by the State with an annual appropriation of \$10,000; and Dr. J. L. M. Curry, on behalf of the Peabody Fund, has given \$2,000 for this year, with the prospect of making a similar gift annual and permanent.

There are other meritorious institutions for the education of females in the State, but the list cannot be conveniently extended in a publication of this kind.

Before leaving the subject of schools and colleges for the whites, brief reference will be made to some of the efforts of the Friends, or Quakers, to illustrate the loyalty of their sect to the cause of education.

THE NEW GARDEN OR FRIENDS BOARDING SCHOOL, is at New Garden, in Guilford County, six miles west of Greensboro, and now on the railroad extending from that city to Winston. In 1833 the School was located on its present site, and in 1834 a charter was granted. The Trustees purchased a small tract, contiguous to which Elihu Coffin added a gift of seventy acres. Donations in money followed from other States, and liberal contributions came from Friends in England. The School was opened in 1837 as a mixed school, on the first day twenty-five boys and twenty-five girls being present. The institution now has three large and well equipped brick buildings. Two courses of study, the "Literary and Scientific," and the "Classical" are provided, each extending over four years, and special normal instruction is given; diplomas to graduates, but no degrees are given. Since its establishment, more than 3,000 boys and girls have studied there.

There are other institutions belonging to the Friends, only here to be noted by name: Belvidere Academy, Perquimans County, opened in 1835; the "Baltimore Friends," who have established twelve or more schools under their direction; and the "Model Farm" enterprise, established near High Point in 1867, designed to elevate agriculture and to add to its profits. The farm contains two hundred acres, and is placed under the charge of an experienced agriculturist. The enterprise has proved a great success and has become, indeed, a model farm.

The Philadelphia Friends have established numerous schools in this State for the benefit of the colored people, and the Friends of New York have done the same for both whites and colored.

COLLEGES FOR THE COLORED PEOPLE.

In addition to the number of public schools for the colored race taught in 1890 (2,327 in all), and the higher schools named above, there are five institutions of such elevation of aim, such extent of facilities and such ampleness of equipment as to rank them among the colleges of the State. These are Biddle Institute, at Charlotte; Scotia Seminary, Concord; Bennett Seminary, Greensboro; Livingstone College, Salisbury; and Shaw University, Raleigh.

These institutions are none of them within the control of the educational authorities of the State, make no reports to them, and are the sole repositories of information relating to their management and condition. Respectful application for such information was made to the Presidents or officers in charge, that the colleges of the colored people might be placed on equal footing in this work with those of the whites. Responses were made from four of these institutions—Shaw University, at Raleigh; Livingstone College, at Salisbury; Scotia Seminary, at Concord; and Biddle University, at Charlotte.

SHAW UNIVERSITY had its origin in the interest of the Rev. H. M. Tupper, D. D., of Manson, Mass., who was a private during the war, and, after the cessation of hostilities, was sent to Raleigh, N. C., as a missionary to the colored people, founding a church and opening the school which gradually expanded into the now extensive and well endowed Shaw University. The University owes its name to the benefaction of Hon. Elijah Shaw, of Wales, Mass., who pledged to the aid of Dr. Tupper's movement the sum of \$5,000.

The property of the late General Daniel M. Barringer was soon afterwards purchased for \$13,000.

The University is now well established, with extensive grounds, handsome and capacious buildings, all of brick, with collegiate buildings, boarding-houses, chapel, medical and law-school buildings and all the appliances for a University course.

There is the Theological Department, in which young men are trained for the ministry; the Leonard Medical School, with a fine building and a corps of competent teachers; the Law Department, and the Female Department, provided with a capacious four-story brick building; the whole with ample and shaded and ornamented grounds, giving token of a very remarkable change in the condition of the colored race. The value of the whole property is estimated at \$150,000, free from encumbrance.

Among the students are representatives from most of the Southern States, some from the Northern States, three from the West Indies, one from South America, one from the Gld Coast of Africa and three from the Congo.

As a matter of interest, the Catalogue for 1891-'2 is inserted, as follows:

PREPARATORY NORMAL.		LAW COURSE.	
Males.....	12	Males.....	13
Females	11		
	23		
NORMAL COURSE.		PHARMACY COURSE.	
Males.....	132	Males.....	10
Females	132	Females	1
	264		11
SCIENTIFIC COURSE.		THEOLOGICAL COURSE.	
Males.....	25	Males	46
Females	18		
	43		
CLASSICAL COURSE.		INDUSTRIAL SCHOOL.	
Males.....	10	Males.....	191
		Females (School of Dress-mak- ing, Domestic Arts, Cooking, etc.).....	122
		Instrumental Music	64
		Total males not counted twice...	265
		Total females not counted twice...	167
			—
	62	Total.....	432

SCOTIA SEMINARY, located at Concord, Cabarrus County, N. C., is an institution for colored girls, under the auspices of the Northern Presbyterian Church. The buildings are large and handsome. The object of the institution is to give an education to colored girls of a useful and practical kind, as well as a due share of the ornamental branches, and with special regard to religious and moral training. The Rev. D. J. Satterfield, D.D., is President. The patronage is good, as shown by the following summary:

GENERAL SUMMARY.

Normal and Scientific Department...	17	Boarding Pupils.....	251
Grammar School Department.....	127	Day Pupils.....	7
Preparatory Department.....	114		—
		Total.....	258
Total.....	258		

SUMMARY BY STATES.

North Carolina.....	140	Tennessee	2
South Carolina.....	77	Alabama.....	2
Georgia	20	New York.....	1
Virginia	11	Maryland	1
Florida	3	Pennsylvania	1
Total.....	258		

LIVINGSTONE COLLEGE originated in the North Carolina Conference of the African Methodist Episcopal Zion Church. It began its work, as Zion Wesley Institute, in one room of a minister's parsonage in Concord, N. C., in 1879. In 1881 Rev. J. C. Price went to London as a delegate to the Ecumenical Conference, which met in that city in September of the same year. After the adjournment of the Conference, Mr. Price remained in Great Britain about a year, and during this time he raised ten thousand dollars with which the trustees of the institution bought the present site, consisting then of one dwelling and forty acres of land. The institution has had a steady and successful growth ever since.

The institution was originally chartered under the name of Zion Wesley College—subsequently changed to Livingstone College. Beginning with three teachers and three pupils, there are now twelve instructors and two hundred and fifty students. And the institution is now conducted in four large buildings, with fifty acres attached, the whole property, near the town of Salisbury, being valued at \$100,000. Besides the main building, there are seven or eight cottages for the use of the instructors. The school is owned, taught and controlled by negroes. The entire teaching force is paid by the colored people themselves.

This institution is supported by the African Methodist Episcopal Zion Church. They appropriate \$6,000 for its maintenance every year. In addition to this amount, the churches give \$2,000 every year as Children's Day money. The students pay toward their own support about \$4,000 every year.

The President, the Rev. J. C. Price, D.D., a full-blooded negro, a man of fine ability and with remarkable gifts of oratory, makes the writer of these pages the following interesting statement:

"As range of instruction we have three regular departments—preparatory, normal and classical. The last course is also termed college course, and the person completing the studies of this course, receives the degree of A. B. The special work of the normal, of course, is the preparation of teachers and for others who cannot or do not take the college course. Number of Faculty twelve, including officers.

"Our buildings are large and commodious. One building is 100x40 and four stories high, brick; another is 60 x 40, four stories, brick; another is 91 x 38, three stories, frame; another is 66 x 26, two stories, brick. Students are not admitted under twelve. Of 250 students, 200 are from other towns and States. Last year we had seventeen States and seventy-five towns and cities represented in the institution. The sexes are about equally divided.

"I neglected to say that buildings have been donated the institution by such men as the late Hon. Wm. E. Dodge, Senator Leland Stanford, Hon. C. P. Huntington, and Mr. Stephen Ballard. We have more than a score of friends North and South, who give scholarships to the institution for the purpose of *aiding* (not *supporting*) students."

BIDDLE UNIVERSITY, Charlotte, is a collegiate institution, under the auspices of the Presbyterian Church, or, more specifically, under the care of the Board of Missions for Freedmen of the Presbyterian Church in the United States, Pittsburg, Pa. The University occupies large and fine buildings in Charlotte, and is named in honor of Major Henry J. Biddle, of Philadelphia, whose widow is now one of its most liberal supporters. The objects of the institution are the education of colored preachers and teachers, and fitting pupils for the useful avocations of life. It has a Theological Department, with a corps of five professors, with a course of three years; a college course, with a corps of six professors and a course of four years, with the usual college designation of classes. The college course embraces two courses of study—the Classical and the Scientific—the students of the former receiving the degree of Bachelor of Arts on graduation; the other that of Bachelor of Science. There is also a Preparatory and Normal Department, with its appropriate Faculty; an Industrial Department, in which the mechanical trades are taught; and the Home Department, which embraces chiefly the domestic and internal order of the college buildings and grounds. The whole number of students for 1891-'2 is 205, in all the departments, viz.: Theological, 17; Collegiate, 51; Preparatory and Normal, 137. The President of the University is the Rev. D. J. Sanders, D.D.

ST. AUGUSTINE THEOLOGICAL AND NORMAL SCHOOL is an institution established in Raleigh for the education of colored pupils of both sexes. It is under the control of the Episcopal Church of North Carolina, and was established out of the proceeds of a bequest of \$40,000 made by a citizen of Pennsylvania. The institution is situated in the vicinity of Raleigh, and occupies suitable substantial buildings of brick, with separate provision for the two sexes. The course embraces the Theological, Collegiate, Normal, and Industrial branches. Young colored men are trained for the ministry, and also for the avocation of teaching. Young women are also trained as teachers, and attention is given to useful industrial training. The Rev. Mr. Hunter is now President, and the Rev. Dr. Sutton is at the head of the Theological Department.

AGRICULTURAL AND MECHANICAL COLLEGE FOR THE COLORED RACE.—Recognizing the need of practical training for the young men of the colored race, and with a view to aid them in maintaining themselves in the

higher grades of industrial life, the Legislature of North Carolina, at the session of 1891, enacted "that a College of Agriculture and Mechanic Arts be established for the colored race, to be located at some eligible place within the State, to be selected by the Board of Trustees" charged with the management of the institution. The corporate name is "The Agricultural and Mechanical College for the Colored Race."

The selection of the location was open to the offers of the various communities desirous of the presence of the institution, and was influenced, in connection with ease of access and similar considerations, by the most liberal offers in land and money for the erection of the buildings. Greensboro became the successful bidder, and the work of construction is now in progress.

The State appropriates annually out of the public moneys \$2,500 to the support of the school.

DESCRIPTION OF COUNTIES.

The counties in the State are ninety-six in number. Addition to them has been made, as demanded by the exigencies of increasing population, by subdivision of the larger ones, or the combination of portions of those lying contiguous to each other. The limit of addition has now probably been reached.

The counties have already been named in the statement of population. They will be considered here alphabetically, the descriptions being drawn from personal observation or the most reliable authorities; and the statistics are taken from the last annual report of the Auditor of the State, excepting such as relate to industrial operations, natural resources and such other topics as are germane to those subjects.

The first to be named is the county of

ALAMANCE.

Historically, this county possesses great interest. It was the focus of the troubles of the Regulators, and on its soil was fought the decisive battle between the Royal forces and those of the rebellious colonists, a preliminary to the struggle between the Crown and the colonies, to be continued until American Independence was secured by the success of the latter. The county was formed in 1848 from parts of Guilford and Orange.

This county is drained by the upper waters of the Cape Fear River, and one of its principal tributaries, the Haw River, crosses it from the north-western to the south eastern corner. The soils of this county are largely fertile red-clay loams, with oak and hickory forests. Slate hills, which rise to the elevation of low mountain chains, occupy the southern end of the county, and have oak and pine forests and thin, sandy loam soils. The northern portion consists of alternating tracts of gray sandy loams and red clays. The cotton belt barely touches the southern edge of the county. The upper end is devoted to the production of tobacco, and the whole of it to grain crops, of which the yield is large.

The manufacturing facilities of the county are very great, and, in number of cotton-looms and spindles, Alamance stands first of all the counties in the State. There are also gold deposits, both vein and placer, in the middle and southern sections.

The North Carolina Railroad runs through the centre of the county, and has been an important stimulus to its industries and general pros-



NEGRO MOUNTAIN, JEFFERSON, ASHE COUNTY.



perity. Graham is the county seat, with a population of 991. It contains three cotton factories. Haw River town, the seat of the Granite Cotton Factory, contains 317 inhabitants. Burlington, formerly known as Company Shops, and the location of the railroad machine-shops, has a population, by census of 1890, of 1,726. Here are five cotton factories.

This county contains 230,039 acres of land, with a valuation of \$1,885,543, and 501 town lots, valued at \$528,998. The leading product is tobacco, the crop of which in 1889, by the Census Report of 1890, was 901,922 pounds, with a small area in the south-east corner of the county in which cotton is successfully produced. The production of wheat and other grains is large, and it is unsurpassed for the quality and abundance of the fruits adapted to the climate, and is also favorable to the raising of the domestic animals. The Auditor's last report shows the number of these to be, 2,581 horses, 815 mules, 6 jacks and jennies, 43 goats, 5,891 cattle, 8,222 hogs, 4,113 sheep.

The receipts from taxation from this report gives, as the general State tax, \$9,541 67; for pensions, \$1,287.28; for school purposes, \$10,313.19; and for county purposes, \$11,043.61.

The population of Alamance by the last census was, whites, 12,688; colored, 5,583; all others, 3; total, 18,271.

ALEXANDER.

Alexander, one of the smallest counties in North Carolina, lies south of Wilkes, and is separated from it by the chain of the Brushy Mountains. A large part of this county is traversed or penetrated by spurs and high ridges thrown off southward from that range, many of which rise to the elevation of 2,000 feet, and its territory is drained southward by the tributaries of the Catawba. The south-eastern section, as well as the middle, is characterized largely by oak forests, with red-clay soils, the higher divides and ridges and spurs showing a large admixture of pine and chestnut, and a more open light-colored and sandy soil. The northern, western, and north-eastern sections are quite broken and mountainous. The culture of cotton has entered the territory of this county within the last few years, though its product amounts to but a few scores of bales. Tobacco is cultivated to some extent on the lighter soils, but corn and wheat are the principal products. It has ample, but undeveloped, water-power, and it has iron-ore beds of considerable extent, as well as a great variety of other minerals.

The county contains 157,250 acres of land. The area in cultivation is well adapted to all the grains, as well as the other products already

named, and is especially adapted to fruits, and the sides of the Brushy Mountains are famed for fine apples, peaches and cherries, the crops of which never fail, being secured by the existence of a thermal belt along the higher sides of that range of mountains. The Auditor's Report shows the following to be the number of domestic animals in the county : 880 horses, 1,022 mules, 44 jacks and jennies, 4,204 cattle, 7,402 hogs, 2,918 sheep.

This county contains 157,250 acres of land, with a valuation of \$590,789.

The receipts for taxation are, for general State purposes, \$2,476.93 ; for pensions, \$387.15 ; schools, \$3,142.91, and county taxes, \$5,007.83.

The population of Alexander, by the census of 1890 was, whites, 8,558 ; colored, 842 ; all others, 3 ; total, 9,403.

ALLEGHANY.

Alleghany County is situated on the Virginia border, and is bounded southward by the curves of the Blue Ridge. In its middle section is a parallel and higher chain. Its entire surface is drained northward into the New and Kanawha Rivers, this, with the two following counties, constituting the New River plateau or basin, the only part of the State drained by the Ohio. It lies on the north-eastern end of the long, narrow, elevated transmontane plateau, and has an average elevation of not less than 2,800 feet. Its forests are of oak, chestnut and pine, with an admixture of white pine in the coves of the Blue Ridge and between that and the Peach Bottom range. Its soils are the common gray and yellow upland loams. Along the banks of the New River and its principal tributaries, especially Little River, are considerable tracts of bottom lands. Its agriculture is divided between the production of grains and grasses and cattle-raising. Its products of buckwheat and rye are next to the largest in the State.

It is a region well suited to the grasses, and the industry of dairy farming, its elevation assuring a temperate but not a cold climate in winter, and exemption from the heats of summer. The number of domestic animals is, 1,555 horses, 224 mules, 11 jacks and jennies, 8 goats, 7,920 cattle, 5,743 hogs, 8,045 sheep.

This county contains 139,978 acres of land, with a valuation of \$355,454, and 64 town lots, valued at \$6,443.

Receipts for taxation are, State, \$1,615.78 ; pensions, \$250.54 ; schools, \$2,149.04 ; county, \$2,984.73.

Population by the census of 1890, white, 4,967 ; colored, 519 ; total, 5,486.

ANSON.

Anson County lies on the southern border of the State, and is bounded on the east by the Pee Dee River. About one-third of its territory, in the south-eastern portion, belongs to the long-leaf pine belt, with its characteristic soils and forests. The north-western and northern sections of the county consist of slate soils (gray, gravelly clays), occupied by forests of oak, short-leaf pine, hickory, dogwood, etc. The river hills near the Pee Dee have a sandy and gravelly loam, becoming more red and clayey on the lower slopes. There lies across the middle, in a north-east and south-west direction, a low, nearly level tract, five or six miles wide, of brown, yellow and gray sandy and clay loam soils, derived from the clays and sandstones of the Trias. These lands are naturally quite productive, but are much worn, and have been devoted mainly to the culture of cotton, which is the most important industry of the county, although the corn crops are quite large. For many years cotton was the chief agricultural product of the county, being the largest producer in the State, and the quality of the staple ranking higher than that of any upland staple produced anywhere in the cotton area of the United States. Relatively, the product now is less than formerly, partly from deterioration of soil, and partly through the facilities afforded by the construction of railroads through the county for transportation, thus inducing a diversity of crops and industries. By the census returns of 1890 the crop of 1889 was 10,822 bales. The county is traversed from east to west by the Carolina Central Railroad, and is connected with Cheraw, S. C.; on the south by another railroad of a length of twenty miles. On the Carolina Central lie valuable and exhaustless quarries of brown sandstone of superior quality, and largely used throughout the State for building purposes.

Wadesboro is the county seat, on the Carolina Central Railroad, and at the northern terminus of the Wadesboro and Cheraw Railroad. It has a population, by the last national census, of 1,198. It is a large interior cotton market, the annual receipts varying from 15,000 to 20,000 bales. It has a cotton factory and a silk-mill, the only one in the State, where silk yarns are converted into thread for Northern silk-weaving establishments. Near the town are noted quarries of much valued sandstone. Polkton has a population of 247, Lilesville of 222, and Morven a smaller one.

The nature of the soil, and also the attention of the people so largely to the culture of cotton, have not favored the increase of the domestic animals. The number in 1890 was—horses, 1,055; mules, 1,826; jacks and jennies, 5; goats, 56; hogs, 6,201; sheep, 2,048.

This county contains 322,098 acres of land, valued at \$1,095,993, and 416 town lots, valued at \$207,183.

Product of taxation—State, \$5,284 77; pensions, \$752.07; schools, \$6,529.09; county, \$6,613.25.

Population—white, 10,237; colored, 9,790; all others, 3; total, 20,030.

ASHE.

Ashe County lies in the north-western corner of the State, adjoining the States of Virginia and Tennessee, its south-eastern edge resting upon the summits of the Blue Ridge mountain chain. It is very rugged and mountainous, the spurs of the Smoky Mountains being thrust out almost across its entire territory and reaching at various points an elevation of nearly 5,000 feet, giving an average elevation of 3,500 feet above tide. It is drained by the two forks of New River, which meet in its north-east corner. Its forests, soils, and agriculture resemble those of Alleghany County. Grass and cattle count for much in this region, and rye and buckwheat are its common crops, as well as of Alleghany and the whole transmontane plateau. In the former (rye) this county shows the largest product in the State, and in the second it is nearly equal to the best. White pine and hemlock, as well as poplar, sugar maple, wild cherry, and walnut, become important constituents of the forests in many places. Jefferson is the county seat, with a population of 413.

This county contains 227,174 acres, valued at \$742,160, and 78 town lots, valued at \$190,275. The adaptation of the natural conditions of this county to pastoral as well as agricultural industry, is shown by the following statement of the number of domestic animals in 1890: 2,500 horses, 384 mules, 12 jacks and jennies, 47 goats, 12,840 cattle, 7,460 hogs, 10,609 sheep.

Taxes—State, \$3,297.21; pensions, \$547.23; school, \$5,160.65; county, \$5,534.27.

Population—whites, 15,033; colored, 595; total, 15,628.

BEAUFORT.

Beaufort County lies south of Washington County, on both sides of the Pamlico River, which, in this part of its course, is an arm of the sound of the same name, from 2 to 6 miles wide, and throws off several wide projections or bays into the county on both sides. It is bounded on the east by Pungo River, another broad arm of Pamlico Sound,

whose waters also penetrate the county in numerous wide navigable bayous. A considerable proportion of the county is occupied by swamp lands. In the northern section, and across its whole breadth, lies the western extremity of the great intersound swamp, which attains its greatest elevation here of 40 feet above tide. In this culminating swell, between the Roanoke and Pamlico Rivers, rise numerous tributaries of these rivers and of the sounds. The central portion of this part of the swamp belongs to that class of soils described as "pocoson," and is of very low fertility. Along the courses of the streams, as they flow out from this swell, are considerable marginal tracts of semi-swamp and oak flats, which are very productive. There are also belts of cypress swamp near Pamlico River and the other streams on both sides, and south of the swamp, in the middle as well as along the western edge of the county, the land is mostly a level piny woods, with a light sandy soil. In the eastern portion of the county, and on both sides of the Pamlico River, both along the banks of this river and of the before-mentioned projections, are large tracts of oak flats and semi-swamp, which are among the most productive soils of the region. Near the mouth of Pungo River occurs one of the largest prairies or natural meadows, *Savannas*, in the State, embracing an area of 1,200 or 1,500 acres. It is treeless and fringed by short-leaf pine and oak forests, and has a fine, close, gray sandy soil, as impervious as clay. Its subsoil is of the same character, but is more clayey, and is of a slightly yellowish color. Marl is found in various parts of the county, but is little used.

Fishing is an industry of considerable importance. The catch of herrings and shad is second only in importance to the catch in the Albemarle section. Great quantities of these fish are shipped fresh, packed in ice, to the Northern markets, and are also sent into the interior of the State. The same conditions exist in this county as are found in other counties for the raising of cattle. The Scuppernong grape and all of its varieties are indigenous. The celebrated Meish grape, named in honor of its discoverer, Mr. Albert Meish, a native of Westphalia, Germany, had its origin in this county. The business of wine-making can be carried on profitably.

Beaufort was erected into a separate county prior to 1775, and named in honor of the Duke of Beaufort, one of the original Lord Proprietors of Carolina. About 40 miles from the Atlantic Ocean, and 150 miles from Raleigh, the capital of the State, it is in form nearly a quadrilateral, bounded on the north by the counties of Martin and Washington, east by Hyde and Pamlico, south by Pamlico and Craven, and West by Pitt.

To those seeking a home, there is no more important factor than a good healthy climate. In this particular Beaufort County is especially blest. Its location is such that it is never affected with either extreme heat or cold, nor with sudden changes. In the winter months there are a few cold spells, lasting from two days to a week, and during which the thermometer shows a general average of about 32° Fahrenheit. These cold spells soon give way to the warm exhilarating sunshine, and the thermometer rises again to its normal average for the winter, which is between 50° and 65° Fahrenheit. In the summer, while we of course have our hot days, as do all other places, yet the thermometer seldom records a temperature of over 90° Fahrenheit in the middle of the day, and even this is tempered by the gentle breezes which come from the broad expanse of salt water to the east of us. The general average for the summer months is about 80° Fahrenheit.

Pamlico River, a beautiful stream, which varies in width from a quarter of a mile to five miles, runs through the county from about north-west to south-east, and empties into Pamlico Sound near the eastern extremity of the county. This river abounds in fish of the finest kinds, of which more will be said hereafter. The average depth of the channel of the river from its mouth to the western line of the county is about ten feet, and any vessel drawing not more than 8 feet loaded, can easily go to the extreme western end of the county by means of the river. The county is divided by it nearly into equal parts, and, with its numerous tributaries, serves a most useful purpose as a means of getting to market the results of labor. By means of it a large commerce is carried on, both by steam and sailing vessels, with the ports to the north, and some foreign commerce. Its banks are lined with farms and steam-mills, and upon its placid bosom the waterman pursues his vocation.

The swamp lands are considered to be among the best in the world, being equal in fertility to the bottom lands of the Nile, though, unlike them, not depending upon an annual overflow for their fertility; or the Mississippi bottom lands, and, unlike them, not being subject to inundation. These lands are, in all cases, found at the head of the numerous streams, which rise in the county and feed Pamlico and Pungo Rivers.

The lands are higher than any other lands in the county, and are shaped like an immense plate, of which the rim is the highest part. This rim serves to keep a certain amount of water in the centre, which has led to the term swamp lands. They are covered with the forest-kinds of timber, including pine, cypress, white cedar or juniper, gum, some oak, maple, beech and poplar.

These lands are nearly always very easily drained, and when drained are the easiest lands cleared in the world—the first crop of corn always paying the expenses of clearing, leaving the timber, which has been cut from the land, a clear profit. The method of clearing the land is to cut it down clean in the early fall and let it stay until spring, when, during a dry time, it is burned off and corn planted, which will produce fifty bushels of corn per acre, at a cost of not over two dollars to cultivate.

The number of acres in this county is 353,363, valued at \$1,136,335.

The number of live stock is—horses, 1,391; mules, 732; jacks, 2; goats, 285; cattle, 9,951; hogs, 10,284; sheep, 4,274.

Population—white, 11,869; colored, 9,203; total, 21,072.

Taxes—State, \$7,322.47; pensions, \$941.31; schools, \$6,633.62; county, \$13,501.23.

BERTIE.

Bertie County lies south of Hertford, in the angle between Roanoke and Chowan Rivers, and consists, for the most part, of level piny uplands, having a sandy loam soil; but the northern part of it is largely pine flats, having an infertile ash-colored fine sandy soil. The southern part, near the Roanoke River, and along its chief tributary, the Cashie, are wide tracts of level oak and pine lands, which are very productive. The Roanoke River, through almost the whole length of this county, is bordered by a tract of alluvial lands from three to six miles wide, subject to annual overflows, and covered with heavy forests of cypress, maple, ash, etc., which are among the most fertile of the continent. In the middle region, on and near the Cashie and its tributaries, are considerable bodies of valuable swamp and semi-swamp lands. Cotton, corn, potatoes, fish and lumber make up the list of industries of this county. Marl is found in the southern and middle sections.

Windsor is the county seat, with a population of 522. Lewiston has a population of 373.

The number of acres in this county is 374,449, valued at \$1,449.34, and 283 town lots, valued at \$151,430.

The number of domestic animals is 1,811 horses, 1,044 mules, 3 jacks and jennies, 157 goats, 9,027 cattle, 18,811 hogs, 5,360 sheep.

The product of taxation is—general taxes, \$6,880.25; pensions, \$977.10; schools, \$11,821.81; county, \$8,656.94.

Population—white, 7,885; colored, 11,291; total, 19,176.

BLADEN.

Bladen County lies south of Cumberland, and, like it, on both sides of the Cape Fear River. It has narrow zones of pine barrens running parallel to the river courses nearly the whole length of the county, and it also abounds in cypress swamps and alluvial "bottoms" along its streams. There are also large bodies of level piny woods. Marl is found in the bluffs of the river. On many of the streams are extensive bodies of gum and cypress swamps. This county has a very limited agriculture, the chief crop being corn; and very little cotton is produced, turpentine and lumber being still among the chief interests. On the western side of the Cape Fear River the lands are higher and less occupied by swamps than on the eastern, but there are fine productive lands along the Cape Fear—productive in corn, but exposed to the dangers of overflow. The eastern side, near the river, has good bottom lands extending back some distance from the river, and these are succeeded towards the east by extensive swamps extending along the margins of South and Black Rivers, and including the large area of Colley Swamp; therefore the area of arable land is relatively small. On this side are found a number of small lakes. Two railroads traverse the county—the Cape Fear and Yadkin Valley on the east, and the Carolina Central on the west—which, together with the streams, give ample facilities for the transportation to market of the leading products of the county—timber, lumber and naval stores. Elizabeth is the county seat.

The number of acres in the county is 454,912, valued at \$1,006,929, and 101 town lots, valued at \$23,375.

The number of domestic animals is—horses, 572; mules, 784; jacks, 2; goats, 595; cattle, 8,289; hogs, 20,700; sheep, 4,734.

The product of taxation is—general taxes, \$4,072.38; pensions, \$654.43; schools, \$5,407.53; county, \$4,309.25.

Population—white, 8,646; colored, 8,117; total, 16,763.

BRUNSWICK.

Brunswick County lies on the west side of the Cape Fear River, and touches the Atlantic on the south. Its central and western portion is occupied by the great pocoson known as Green Swamp, which, with its many projections, covers nearly half the territory of the county. This swamp is bordered by wide tracts of canebrakes, and contains extensive areas of gum, cypress and juniper swamps, which have been for half a

century the center of a large lumber trade. The various streams which flow from this swamp to all points of the compass are bordered by oak flats, tracts of semi-swamp, and often by canebrakes, and in the body of it are numerous hummocks or flat ridges having a silty soil and a growth of short-leaf pine and small oaks. Between the arms of the swamp, on the narrow divides, and particularly in the southern portion of the county, near the seashore, are patches of long-leaf pine lands with sandy soils, and elsewhere of level pine woods, valuable for lumber and naval stores. Along the Cape Fear are large bodies of alluvial lands of unsurpassed fertility, which are among the best rice soils in this country. Waccamaw Lake occupies the highest part of Green Swamp, and covers an area of about forty square miles. Naval stores and lumber are, of course, the principal interests, agriculture being of subordinate importance and limited mainly to the cultivation of rice, of which its product is more than double that of any other county in the State.

At the mouth of the Cape Fear River lies the town of Southport, once called Smithville in honor of one of the former Governors of North Carolina, whose name is imperishably associated with the destinies of the University, but who is forgotten in that spirit of innovation which neither reverences the past nor respects the present. This port offers a fine harbor, used at present as an incoming or an outgoing stopping point for vessels inward or outward bound, in connection with Wilmington, and also as a refuge for vessels in distress, now much utilized by reason of the increased depth of water on the bar. It is destined to be a very important coaling port, lying on the path of both north- and south-bound vessels, to which object great facilities will soon be added by the completion of a road into the interior, lately begun, and to be connected with the coal-fields. Southport is the county-seat, with a population of 1,207.

The number of acres of land in the county is 410,655, valued at \$527,460; and 225 town lots, valued at \$121,565.

The number of domestic animals is—horses, 345; mules, 199; goats, 711; cattle, 8,279; hogs, 16,447; sheep, 593.

Proceeds of taxation—State, \$2,680; pensions, \$403.93; school, \$4,861; county, \$2,931.40.

Population—white, 6,139; colored, 4,767; total, 10,900.

BUNCOMBE.

Buncombe County, once so ample in its area as to receive, and almost merit, the title of the "State of Buncombe," is now much reduced in extent, and is no larger than many of the counties of which it is the parent. Its eastern boundary follows the line of the Blue Ridge, its crests forming the dividing line between McDowell and Buncombe. On the west the New Found range marks the separation from Haywood County. Madison on the north, and Henderson on the south, have no natural boundaries, the lines of division being artificial.

The area of the county is 620 miles. The acreage is 341,542, of which 99,602 acres were improved at the time of the census of 1880. Nearly the whole surface is susceptible of improvement; for, though the mountains predominate as natural features, there are few without deep soil to the top, and much of the best pasture land and a large portion of land now used for the culture of fine yellow tobacco is mountain side or mountain top.

Buncombe County is bisected by the French Broad River, which, rising in Transylvania, pursues a course nearly north, and passes out of the State into Tennessee at Paint Rock. It is a stream of considerable volume and of surprising width for a mountain stream. At Asheville it is 110 yards wide, and little less than that for twenty miles above. Below, the character of the stream changes and the width varies. At Asheville the rapids begin; above that point the current is gentle, and there is natural navigation, with some obstructions which the National Government has partially removed up to Brevard, in Transylvania, a distance by water of forty miles. The water-power of the river has not been utilized. Above Asheville there is none; below, the narrow interval between the river and the cliffs causes embarrassment in the location of mill-sites. The Swannanoa is the only other river in the county of any importance—more noted for its beauty than for its usefulness. Numerous small streams prove much more useful in their applications to mills and machinery than the larger bodies of water.

The valleys of Buncombe County are narrow and limited in extent. The general surface of the county is hilly rather than mountainous, offering facilities for agricultural operations largely used, though the mountains are sufficiently lofty and abundantly numerous to give a mountainous character to the landscape.



MOUNT MITCHELL

The soil of Buncombe is fairly fertile, but does not equal that of Haywood or Transylvania. But it is sufficiently productive in all the cereals, the grasses and fruits of the temperate zone. Wheat produces an average of ten bushels to the acre. Oats yield exuberantly; corn thrives and produces from thirty to fifty bushels to the acre; clover and all the grasses are so well favored by soil and climate as to appear indigenous. The fruits find a congenial home here, especially the apple, which, in size and flavor, and in abundant, healthy yield, are seldom equaled. The Irish potato here finds a favoring soil and climate, the yield being great and of superior quality. All kinds of vegetables grow with luxuriance, and the cabbage is especially noticeable for size and good quality.

The timber of this county includes all the varieties known in the mountains—oak, hickory, walnut, elm, beech, birch, sycamore, maple, locust, buckeye, pine, the hemlock, spruce and others, with an undergrowth of chinquapin, dogwood, laurel, kalmia, azalea and other shrubby trees.

Among the products of the county is tobacco, the one which has most largely and most rapidly added to the profits of agriculture. It has been cultivated as a general crop only within the past twelve years, and the soil of the hills down the French Broad, and back a few miles from the river, seem better adapted to its culture than the southern portion of the county, where few planters have attempted it. The quality produced is almost altogether the bright yellow, of a quality that commands prices equal to those obtained for the tobacco of the center of North Carolina. The culture is increased under growing demand and convenient markets, and it has become the money crop of a greater part of the county.

Buncombe County is traversed by three railroads, or rather by three branches of the same road, the main stem of the Western North Carolina road entering the county from the mouth of the Swannanoa Tunnel, and dividing at Asheville into the Paint Rock branch, which is 43 miles in length, and the Ducktown or Pigeon River branch, finished to Murphy, a distance of 130 miles; and by the Asheville and Spartanburg road to Spartanburg, S. C., a distance of 70 miles.

Asheville is the county-seat, a city containing now a population of upwards of 12,000, with all the conveniences of a city, with numerous fine hotels unsurpassed in the South, electric and gas lighting, electric railways, waterworks, sewerage, improved streets, telephone exchange, ice factories, etc. Its fame as a health and pleasure resort extends over the continent.

Buncombe County contains 341,622 acres of land, valued at \$2,138,293; and 1,859 town lots, valued at \$2,960,712, the total valuation for county and town and other property listed for taxation reaching \$7,624,918.

The number of domestic animals is—horses, 3,382; mules, 2,320; jacks and jennies, 23; goats, 20; cattle, 14,231; hogs, 11,161; sheep, 4,981.

Taxes—State, \$20,369.38; pensions, \$2,708.12; school, \$18,740 36; county, \$35,968.60.

Population—white, 28,640; colored, 6,626; all others, 11; total, 35,266.

BURKE.

Burke County lies westward of Caldwell on both sides of the Catawba River, which traverses its middle section and drains its entire territory. Its southern flank lies upon the crests of the South Mountains, which here reach an elevation of over 3,000 feet above the sea and send off spurs in a northerly and north-easterly direction almost to the middle of the county. The northern end is elevated upon two of the most massive spurs of the Blue Ridge, Linville and Table Rock, which here rise to an elevation of nearly 4,000 feet; and from this are thrust out numerous long and rugged spurs and ridges in a south-easterly course. A large part of the territory of this county, therefore, is mountainous, and the average elevation is not less than 1,300 feet. In its middle section are considerable tracts of red-clay soils, with forests predominantly of oak, hickory, etc., while the remainder of the county is characterized in this respect by mixed forests of oak, pine, chestnut, etc., with white pine in the mountains of the south and north. The river and creek bottoms are very extensive and fertile, and have light-colored clays, loams, and sandy soils. In the middle section, on both sides of the river, the uplands usually have a red-clay soil and oak forests. The other parts of the county have soils of a lighter color, yellowish to gray loams, and forests of the usual mixed character of the region—oak, pine, chestnut, sourwood, dogwood, etc. Placer gold mines are numerous in the South Mountains, and there are several vein mines on the north side of the county. Cotton and tobacco have been added to the list of cultivated crops within a few years, but grain forms the chief crop.

The diffusion of gold through this county is remarkable. It is found chiefly on the south side of the line of the Western North Carolina Railroad, and most largely among the South Mountains, on its spurs and among its valleys. The gold area extends into the adjoining county of Rutherford, the placer workings of which have been only

surpassed in profit by those in California, and at one time the resort to them was as large and tumultuous as ever animated the immortal "Forty-nine-ers." The quantity of gold taken here between 1832 and 1842 was so great, and the needs of a circulating medium for the convenience of miners and the country around, that the General Government authorized the issue, by Dr. Bechtler, of Rutherford, of gold pieces of the denominations of \$1, \$2.50 and \$5, pure gold, without alloy; and so great was the trust reposed in the knowledge and the integrity of the coiner, that the issue of this private, unique mint, passed current without question throughout the Union.

Morganton, the county seat, is the site of the great and handsomely built Western Asylum for the insane; and the Asylum for the Deaf and Dumb for the whites, having become in danger of being overcrowded with patients with the growth of population, the Legislature has made provision for the erection of another institution at Morganton for the same class of unfortunates, to be known as "The North Carolina School for the Deaf and Dumb." Here also is a cotton factory and an extensive steam tannery, one of the largest and best equipped in the South. The population is 1,557. Glen Alpine has a population of 252.

There are in Burke County 379,347 acres of land, valued at \$780,110, in addition to the value of 312 town lots at \$146,977.

The number of domestic animals is—horses, 1,206; mules, 1,196; jacks and jennies, 23; goats, 21; cattle, 6,093; hogs, 8,012; sheep, 2,646.

Taxes—State, \$3,612.68; pensions, \$552.92; schools, \$4,995.48; county, \$11,506.25.

Population—white, 12,378; colored, 2,561; total, 14,939.

CABARRUS.

Cabarrus County is not unlike the adjacent counties in general features, its topographical character being similar, and its agricultural products the same. It is drained by the upper waters of Rocky River, one of the chief affluents of the Yadkin, and abounds in water-courses, which traverse its territory from north-west to south-east, dividing it into narrow zones or flattish swells, the higher parts of which are comparatively level and are covered with a growth of oaks and pines and have a characteristic gray to yellow loam soil, while along the borders of the streams there are numerous and often extensive tracts of alluvial bottom lands, which, as well as large tracts of red clay and dark gravelly loam soils, are covered with heavy forests of oak, hickory, walnut, poplar, maple, etc. Along the eastern margin of the county lies a narrow

belt of a few miles in breadth of slate hill-land, in the forests of which the short-leaf pine predominates. The soils of this tract are much less productive than the average of the county. Cotton enters as a large element into the agriculture of this county, and divides almost equally the attention of its population.

Cabarrus was early famed for the discovery within its territory of the largest mass of pure gold ever found in the eastern part of the United States. The search for that metal was continued for many years with great success by placer mining, and is still continued in that form and also by vein mining.

Concord, the county seat, on the Richmond and Danville Railroad, is a thriving town with a population of 4,339, and contains cotton mills and other manufacturing establishments. Mount Pleasant has a population of 375.

The county contains 223,034 acres of land, valued at \$1,565,292, and 563 town lots, valued at \$284,245.

The number of domestic animals is—horses, 2,129; mules, 1,601; jacks and jennies, 11; goats, 33; cattle, 6,370; hogs, 8,236; sheep, 2,716.

Taxes produce for State purposes, \$8,142.47; pensions, \$1,105.17; schools, \$9,069.43; county \$10,021.75.

Population—white, 12,863; colored, 5,459; total, 18,142.

CALDWELL.

Caldwell County lies upon the flanks of the Blue Ridge, and extends southward beyond the Brushy Mountains, a smaller and parallel range 2,000 feet and more in altitude. It is drained by the upper tributaries of the Catawba River and of the Yadkin, the larger of which rise in the summits of the Blue Ridge and its culminating region in Grandfather Mountain, which touches the elevation of nearly 6,000 feet above the sea. This mountain throws off a number of long, heavy spurs down to the middle of the county, and is traversed midway, in a direction parallel to the other two chains, by the Warrior Mountains, so that its surface is for the most part quite broken and rugged; but the different chains are separated by extensive open valleys, and there is a great area of river and creek bottoms. The lands in the middle and southern sections generally have a red-clay or yellow sandy loam soil of more than medium fertility, while its higher regions on the ridges and spurs of the mountains are frequently slaty ledges, with gray sandy and gravelly soils of medium to low quality. Its forests are predominantly of oak in the middle section, and of pine and oak in the southern and



VIEW IN HAPPY VALLEY, CALDWELL COUNTY.

northern—that is, in the more mountainous regions, while, in the latter section, white pine, hemlock and chestnut constitute a considerable element of the forest growth. The chief crops are grain, but tobacco culture has been recently introduced, and for a few years past a few bales of cotton have been raised in an experimental way.

Through the northern part of this county run the Yadkin River and some of its upper tributaries, along which lie that beautiful system of broad and fertile valleys which so early in the history of this section of the State attracted settlement, the immigration being marked by the preponderance of brave, energetic men, able to secure their hold against the resistance of the Indians, as well as to subdue the forces of nature, resulting in that lengthened period of repose and the reduction of the valleys to that finish of culture and stage of refinement which they now present to the eye. The Valley of the Yadkin is conspicuous through its entire length for its beauty, fertility and productiveness.

Lenoir is the county seat, a pretty village of 675 people, and long noted as an educational centre. It is the terminus of the Chester and Lenoir Narrow Gauge Railroad, connecting at Hickory with the Western North Carolina Railroad.

The number of acres of land is 334,271, valued at \$853,278; and 205 town lots, valued at \$76,343.

The number of domestic animals is—horses, 1,208; mules, 972; jacks and jennies, 39; cattle, 6,804; goats, 19; hogs, 10,086; sheep, 3,224.

Taxation yields—for State purposes, \$3,915.30; pensions, \$578.15; schools, \$4,270; county purposes, \$4,536.46.

Population—white, 10,737; colored, 1,561; total, 12,318.

CAMDEN.

Camden County is a long narrow strip of territory, parallel to Currituck. Northwestward it reaches the Dismal Swamp, and southward Albemarle Sound, and lies between two of its projecting arms, Pasquotank River and North River. The northern and larger portion of this county belongs to the description of semi-swamp or oak flats, and along the main rivers, and frequently for a mile or two from their margins, are gum and cypress swamps. At a distance from the streams these lands, as in the preceding county, are characterized by a heavy growth of oak, hickory, short-leaf pine, etc. The middle portion of the southern end of this county, along the divide between its two bounding water-courses, has a narrow zone of sandy loam soil, with long-leaf pine forests. The main crops are corn and cotton, with some small grains;

but fishing and truck-farming are also among the common and profitable industries, and several thousand bushels of flax-seed are annually exported. Shipments are made to Norfolk by the Dismal Swamp Canal and by rail.

The county contains 118,235 acres of land, valued at \$330,444; and 65 town lots, valued at \$21,155.

The number of domestic animals is—horses, 934; mules, 297; jacks, 2; goats, 27; hogs, 7,765; cattle, 3,268; sheep, 1,328.

Taxation produces—for state purposes, \$1,467.89; pensions, \$229.91; schools, \$3,421.32; county, \$2,903.15.

Population—white, 3,347; colored, 2,320; total, 5,567.

CARTERET.

Carteret County occupies a long strip of country south of Craven County and of Pamlico Sound, and is bounded southward by the Atlantic Ocean. It is traversed east and west through the middle by a succession of swamps, the largest of which, occupying its eastern peninsular projection, is called the Open Ground Prairie Swamp. This is a peat swamp, quite barren in its middle parts, but fringed around its margin with oak flats and gray silty soil. There is also a line of sand islands (sand dunes) along the coast, and inland, parallel to the coast, are several ridges of long-leaf pine sandy lands. The highest part of the county is only 37 feet above tide. Carteret has the advantage of the best harbor on the coast of this State.

This county lies immediately on the sea coast; its general direction is east and west or nearly so. It is protected from the ocean by narrow strips of beach and sand hills, that are known as the banks. Between these banks are two narrow sounds, navigable for small vessels, known as Core Sound and Bogue Sound. There are several navigable creeks emptying into these sounds, giving facilities to farmers for the shipment of their crops. The soil is generally light and sandy, and will produce all of the cereals and cotton, also melons of very large size and of exquisite flavor; also sweet potatoes, Irish potatoes, and all kinds of vegetables. The season is very early, owing to the proximity of the ocean.

The Atlantic and North Carolina Railroad terminates at Morehead City, which lies immediately on Beaufort harbor; the waters are of sufficient depth to admit vessels of very large size. On the bar there are twenty feet of water at mean tide. In this county, on the strips of land called the Banks, are droves of wild hardy horses, known as bank ponies. These animals, though small, make very efficient farm horses.

There is another industry, that with suitable appliances, could be carried on very profitably by the people of Carteret County; the industry is whaling. At certain seasons these huge monsters of the deep visit the shores of North Carolina, and are frequently seen in large schools. Early in the eighteenth century, the coast of North Carolina was a famous cruising ground for the New England whaler. An early writer says, that the whale fishery then carried on by the New Englander on the coast of North Carolina yielded annually from eleven to thirteen hundred tons of oil, and that he had seen three whale ships at one time in the Cape Fear.

Beaufort is the county seat, with a population of 2,845, including the township; and Morehead City, the terminus of the Atlantic and North Carolina Railroad, has a population of 1,140.

The number of acres of land in the county is 162,700, valued at \$294,342, and 1,478 town lots, valued at \$329,842.

Number of domestic animals—horses, 1,247; mules, 76; goats, 135; cattle, 6,866; hogs, 9,304; sheep, 2,310.

Taxes produce for State purposes, \$2,366.55; pensions, \$346.45; schools, \$3,755.91; county taxes, \$3,204.16.

Population—white, 8,528; colored, 2,297; all others, 1; total, 10,825.

CASWELL.

Caswell County has a somewhat thin gravelly soil, though with rich bottoms along Dan River, which flows along and through its northern border and along Country Line and Hyco Creeks. The larger part of its territory is devoted to the production of bright yellow tobacco, while grain crops occupy a comparatively subordinate position, and are produced principally along the river and creek bottoms which abound in the northern and eastern sections of this county. The north-eastern section consists largely of red clay lands, with oak and hickory forests, while the lighter tobacco soils occupy most of the southern and western portions. Caswell ranks third among the tobacco counties in aggregate product. The crop of 1889, by the census returns of 1889, was 2,510,699 pounds.

It has only a few urban settlements, the population being distributed on their farms, well cultivated and largely adorned with handsome and commodious houses. Yanceyville is the county seat, noted for its elegant court-house. Its population is small.

Caswell County contains 248,256 acres of land, valued at \$1,163,676, and 286 town lots, valued at \$118,676.

Of domestic animals it has, horses, 1,563; mules, 917; goats, 1; cattle, 3,101; hogs, 6,135 sheep, 1,523.

Taxes yield for State purposes, \$5,761.76; pensions, \$746.78; schools, \$6,250; county, \$7,722.47.

Population—white, 6,639; colored, 9,389; total, 16,028.

CATAWBA.

Catawba County lies on the northern border of the cotton belt and on the margin of the Piedmont division of the State. It is bounded northward and eastward by the Catawba River, and has its western end on the foot-hills of the South Mountains. As to its middle, southern and eastern parts, it resembles the county of Iredell, from which it is separated by the Catawba River. Through the middle region of it, and in a north-east and south-west direction, is a broad belt of oak and hickory forest with a red clay soil, while that of the western section is a light to yellow sandy loam. The streams of this county, all of which flow into the Catawba, are occasionally bordered by considerable tracts of alluvial lands, and along the course of the Catawba are extensive bottoms. These and the red lands of the county are very productive. In the south-eastern corner, as well as along the north-western border, are mountain spurs which rise to an elevation of 1,500 feet and more above sea-level. A broad flattish plateau crosses the county in a north-west and south-east direction between these mountain spurs, which, for the most part, is characterized by sandy and gravelly loams, and its oak forests are intermingled with much pine.

The culture of cotton has been introduced into the county since 1870, and has become the money crop. The larger part of its territory is still devoted to grain, of which more than half a million bushels are produced. Tobacco has been added to the list of its products within a few years, nearly half of the county being well adapted to the better grades of this crop.

This county was largely settled by immigrants of German origin, who retain unimpaired, their thrift, industry and skill, both as farmers and in mechanical industries. Few counties in the State are better cultivated and made more productive. It is traversed by the western division of the Richmond and Danville Railroad, and also by the Chester and Lenoir Narrow Gauge Railroad.

Newton is the county seat, with a population, including the adjacent villages of Conover, with 337, Maiden 264, and Newton 1,096, of 3,633. Catawba 296, and Hickory 2,023. This is the most important business

town in the county, containing a large wagon factory, wood-works, good hotels, schools, churches, &c. In the county, eight miles distant, are the famous Catawba Springs.

The county contains 261,479 acres of land, 887 town lots, valued at \$340,001.

Domestic animals—horses, 1,923; mules, 1,471; jacks and jennies, 18; goats, 68; cattle, 7,434; hogs, 10,775; sheep, 4,094.

Proceeds of taxation—for State purposes, \$7,488; pensions, \$1,023.19; schools, \$8,363; county, \$7,631.43.

Population—white, 16,073; colored, 2,616; total, 18,689.

CHATHAM.

Chatham County lies contiguous to the long-leaf pine belt, and includes a small strip of it along the southern edge. It is drained by the waters of the Cape Fear River, the main affluents of which unite near its south-east corner. The principal of these, Deep River, has, on both sides, extensive bottom lands, covered with oak and short-leaf pine forests, which are very productive. A large part of its surface is hilly and broken, especially near the rivers, and in the middle and north-eastern sections these hills rise to an elevation of from 600 to 700 feet above the sea, attaining, in a few cases, the elevation and designation of small mountains. The average elevation is 500 feet. The soils are, for the most part, those of the oak uplands, generally sandy gray to yellowish loams, alternating here and there with belts of red-clay soil. Toward the southern border occur the sandy and gravelly oak and pine hills. With the exceptions noted, the forests consist mostly of oak, hickory, etc. Along the eastern margin of the county is a wide, level tract of oak and pine lands, with a gray clay loam soil of Triassic origin. Only a minor portion of Chatham, in the southern and eastern parts, is devoted to the culture of cotton, grain crops constituting its predominant agricultural interest. The tobacco crop for 1889 is given as 345,466 pounds. Its facilities for manufacturing are unsurpassed. Two large and two other considerable rivers cross its territory, with a fall of from 300 to 400 feet, and develop a force of more than 40,000 horse-power. The rivers provide only meagre facilities for navigation, but this defect is supplied by the Raleigh and Augusta Air-Line Railroad, which passes through the southern part of the county, and which connects Pittsboro, the county seat, by a branch road of twelve miles, with Moncure. The Cape Fear and Yadkin Valley road runs through the whole western end of the county, and its construction has stimu-

lated the growth of numerous villages, such as Egypt, Gulf, Ore Hill, Siler City and others, all of which have become centers of industrial pursuits, and also of good schools. At Egypt is a coal mine, the most extensive in the State, opened before the war, and now again operated with success. The coal is bituminous. At Ore Hill is a very valuable iron mine, worked during the Revolutionary war, and again during the late Civil war, and is now to be largely utilized in connection with the steel works in process of erection at Greensboro.

Pittsboro is the county seat. Its population was not returned separate from that of the township. Combined, it was by the census of 1890, 2,242. Siler City has 254.

The total number of acres in the county is 498,184, the value of which is \$1,850,857, and there are 638 town lots, valued at \$94,912.

Of domestic animals there are 2,766 horses, 2,424 mules, 23 jacks and jennies, 859 goats, 14,141 cattle, 26,879 hogs, 18,207 sheep.

Product of taxation—State, \$8,048.40; pensions, \$1,203.05; schools, \$9,664.29; county, \$12,186.03.

Population—white, 17,214; colored, 8,199; total, 25,413.

CHEROKEE.

Cherokee County occupies the extreme western corner of the State, of which it includes the whole breadth, at this point less than 20 miles. It is bounded in part on the north by the Smoky Mountains, and touches the States of Tennessee and Georgia on the west and south. The valley of the Valley River is open and comparatively level, with extensive bottoms and bordering hilly lands. This valley is nearly 20 miles long and from 3 to 5 miles broad, and contains a large proportion of fine agricultural lands. Its agriculture is divided between the culture of grains and grasses and cattle-raising, and mines of gold, iron and soapstone have been open and wrought for many years. The iron-ore deposits are of great extent, and there is a great variety of colored marble on Valley and Nantahala Rivers which needs only means of transportation to become valuable.

The timbered land amounts to at least twelve-thirteenths of the entire area and is covered generally with a heavy growth of almost all the varieties of the oak except the live oak, interspersed with white and scaly bark hickory; tulip or (poplar) of two varieties, cucumber and wahoo, white ash, wild cherry (black and bird cherry), black and white walnut, black and sweet gum, red, white, mountain and ash-leaved maples, persimmon, dogwood, chestnut and chinquapin, red, yellow

and black birch, sassafras, white, yellow and black pines, hemlock (or spruce pine), linn or lime, snowdrop tree, black, yellow and honey locust, yellow wood (*Cladastis tinctoria*), crab apple, service, hornbeam and ironwood, sycamore, etc. Portions of Cherokee, Graham, Swain and Macon Counties contain very large quantities of chestnut oak as well as hemlock, and can thus furnish the materials for the largest tanning operations, as the climate and waters are so mild and pure as to offer great inducements in this line as soon as the railroads are completed to this section.

Besides the valley of Valley River already named, the valley of the Hiawassee and Nottely Rivers, of Peach Tree, Brass Town and other creeks, extend an area of fertile and level arable lands found to wider extent than elsewhere in the mountains, the recession of the Blue Ridge into north Georgia permitting a large area of lands, hilly but not mountainous, together with the valleys, offering with favorable climate and fertile soil every encouragement to agricultural pursuits.

In minerals this county is exceedingly prolific. Gold is found in numerous localities and has amply rewarded research. Iron in abundance and of superior quality is of such quantity and value as long since to have attracted industry and capital; marble of all colors and varieties underlays many sections, and is worked to advantage; talc or soapstone is found in great abundance and of peculiar excellence, and the quarries in Nottely River have long furnished exhaustless supplies to a Georgia Company. Manganese is found abundantly in addition to other minerals.

The Western North Carolina Railroad is now completed to Murphy, and the North Georgia and Marietta road connects that town with Atlanta. With the addition of these facilities to access and transportation, capital has already been attracted to the county, and the rich resources of the county promise early development.

Murphy, the county seat, is reported with a population of 803.

There are 324,583 acres of land in the county, valued at \$871,884, and 207 town lots, valued at \$134,521.

The number of domestic animals is—horses, 1,055; mules, 522; jacks, 11; goats, 34; cattle, 8,052; hogs, 9,516; sheep, 6,910.

Products of taxation—State, \$359.45; pensions, \$504.47; schools, \$3,785.33; county, \$8,147.30.

Population—white, 9,655; colored, 321; others (Indians), 48; total, 10,124.

CHOWAN.

Chowan County lies in the angle of the Chowan River and Albemarle Sound. Northward it consists of sandy, upland piny woods, except narrow tracts along the river and some of its tributaries, where cypress swamps of considerable extent are found; and there are also large areas of oak flats. The southern portion of the county, lying near the sound and south of the Yeopim River, is characterized by a gray clay-loam soil and a mixed oak and pine forest growth, and is for the most part very productive. Bear Swamp, which crosses the county in a north-east and south-west direction, is more properly a semi-swamp from 3 to 5 miles wide, very level, with a gray silty soil, and the characteristic growth of such lands comprises short-leaf pine, oaks, maple, ash, dogwood, occasionally cypress and gum, and frequently a large admixture of holly, which here attains the size of oaks and furnishes a superior cabinet wood. Its fisheries are among the largest and most profitable in the country. Being surrounded on three sides by navigable waters and crossed by a line of railway, the county has abundant means of transportation.

The fisheries referred to are probably the largest and most profitable in the section devoted to that industry, lying along the shores of Albemarle Sound and the lower waters of Chowan River. The seine fisheries engage much capital and numerous hands; the seines, including the handling ropes, are upwards of two miles in length, and are drawn into the shore by steam power. The fishing season begins in February and continues until early in May. The principal catch is shad, now chiefly packed in ice and sent fresh to the Northern markets; herring, caught in immense numbers, often from 60,000 to 100,000 in one haul, largely shipped fresh on ice, but mostly salted and packed in barrels; rock fish, sturgeon, perch and other fish.

Edenton, the county seat, is one of the oldest towns in North Carolina, prettily situated on Edenton Bay, and has the benefit of water and railroad transportation, by the latter with Elizabeth City and Norfolk, and by the former with the navigation of the sound and other waters of the State.

These facilities have greatly stimulated the business of truck farming, to which both soil and climate invite. The population of Edenton is given as 2,025.

The county contains 95,632 acres of land, valued at \$463,442, and 445 town lots, valued at \$250,754.

Of domestic animals there are—horses, 881; mules, 454; goats, 133; cattle, 2,457; hogs, 8,067; sheep, 582.

Proceeds of taxation, for State, \$3,103.70; pensions, \$426.77; schools, \$4,578.55; county, \$3,541.85.

Population—white, 4,010; colored, 5,157; total, 9,167.

CLAY.

The small county of Clay, lying on the southern border, touches the State of Georgia, and is bounded on the east by Macon County, which it resembles very closely in all its features, physical and agricultural, and in its development. It is drained in a westerly direction by the Hiwassee River, which takes its rise in the Blue Ridge in Georgia. Its eastern section lies upon the high plateau of the upper Nantahala River, and on the north lies the chain of the Koneteh Mountains. A large part of its territory is very mountainous. It has fine, open valley lands on the river and its tributaries. Its southern section is hilly, somewhat mountainous, with fair agricultural capabilities. Both gold and mica are found, but have not been mined on any considerable scale.

The county is finely diversified with mountains and valleys. Those bordering on the Hiwassee, alternately broad and contracted, are very fertile; those on the Tusquittee equally productive, though not so extensive. The broad rolling lands on the south along the Brasstown and some smaller streams, and bounded on the south by the Chestatoo and other spurs of the Blue Ridge, are well adapted to wheat and other small grains, and to grass. The mountains along the eastern and north-eastern sides are high and rugged, forming a landscape of great picturesqueness. The soil throughout the county is well adapted to grass, and hay is cured in large quantities. The county is well adapted to stock-raising, both with natural and artificial pasturage, and large numbers of cattle and some horses and mules are annually driven to market. The lands are well tilled, and the number of improved implements for agriculture exceeds that of any county of its size in the western section.

The county seat is Haysville, with a small population, that of the township being 1,500.

The county contains 224,251 acres of land, valued at \$262,418; and 58 town lots, valued at \$10,341.

Of domestic animals there are—horses, 574; mules, 469; jacks and jennies, 16; cattle, 3,892; hogs, 7,032; sheep, 5,551.

Products of taxation—for State, \$1,235.12; pensions, \$179.74; schools, \$1,407.82; county, \$3,036.86.

Population—white, 4,055; colored, 142; total, 4,197.

CLEVELAND.

Cleveland County is situated on the southern border of the State. Its northern end rests upon the summit of the South Mountains, at an elevation of nearly 3,000 feet above sea-level, and its upper half belongs properly to the Piedmont division. It is drained by several large tributaries of the Broad River, which rise in this chain and cross the county southward into South Carolina. Its agricultural and topographical features are very similar to those of Catawba County, to which its territory is contiguous. Its soils consist of alternating tracts of red or reddish clay and gray and yellow gravelly loams (chiefly the latter), and have their corresponding forests of oak, and of oak mingled with pine. This county produces cotton throughout its territory, even up to the flanks and on the slopes of the South Mountains, although this form of agriculture is the growth of a decade, the product having increased twelvefold in that time. Gold mining is also a familiar industry, placers being common in the north, and vein mines in the south end.

The soil is generally well adapted to grain, especially to wheat, which is of fine quality and unusually productive, fifty-two bushels to the acre having been reported, and thirty bushels is not uncommon. Oats and corn thrive in unusual luxuriance. Tobacco proves well adapted to both soil and climate, and the finer varieties are in no way inferior to those raised in the counties which for generations have brought up their culture to the dignity of a fine art. And this is the result of diversities in the characteristics of the soil, there being found those alternations from the deep rich mould of the lowlands, and the lighter covering of the uplands, not less abounding in the elements of fertility. The surface of the county is undulating, but it is watered by several large rivers and creeks, among which are the two Broad Rivers and Buffalo Creek. Along these stretch large areas of rich alluvial bottoms, unsurpassed in fertility. Among the subjects of cultivation to which there is every encouragement is that of the grape, which, in the past, received more attention than now. The Cleveland Vineyard covers more than one hundred acres, and its fruit was once in large demand in the Northern markets.

Among the minerals found in the county is tin, found near King's Mountain, of which great ultimate expectation is entertained; mica, of which some of the largest pieces yet found have been obtained; gold, copper, corundum, kaolin, etc.

The water-power of the county is great and exhaustless, and is applied to several cotton-mills and other industries. In addition to the aid of water-power, Cleveland has the aid of two important railroads—the Carolina Central, bisecting it nearly from east to west, with its eastern terminus at Wilmington; and a part of the great Air-Line system, connecting with Norfolk; and the Three C's, connected on the south with Charleston, with ultimate northern terminus on the Ohio River, but at present completed only to Marion, on the Western North Carolina Railroad. These roads both pass by Shelby.

Shelby is the county seat, finely situated on a series of dome-like hills, and, in beauty of location and elegance of construction, is unsurpassed by any town of its size in the State. It is intersected by broad, straight and shaded streets, and is adorned with a large, well-planted square, in the center of which is the court-house, on the apex of the series of hills, the culmination of fine prospects commanding the surrounding country and the distant mountains. Here there are good hotels, fine churches, flourishing schools and an industrious population. Two miles east are the Cleveland Springs, celebrated for their varied curative powers, their comfortable accommodations and their agreeable environments. Shelby has a population, by the census of 1890, of 1,394; Kings Mountain, 429, and a number of other small villages.

The county contains 271,957 acres of land, valued at \$1,630,356; and 781 town lots, valued at \$289,926.

Of domestic animals there are 1,282 horses, 2,432 mules, 11 jacks and jennies, 23 goats, 6,678 cattle, 8,247 hogs, 3,900 sheep.

Products of taxation—State, \$7,961; pensions, \$1,127.14; schools, \$8,692.56; county, \$15,851.84.

Population—white, 17,301; colored, 3,093; total, 20,394.

COLUMBUS.

This county lies in the south-east corner of the State bordering upon South Carolina. It contains a considerable portion of upland piny woods. It is penetrated through all its parts by narrow belts of gum and cypress swamps and considerable tracts of oak and pine flats. The average soil of its upland piny woods is of moderate fertility, well adapted to the growth of cotton, but the richer swamp and gray-loam lands are devoted principally to corn. Brown Marsh and White Marsh are two large bodies of swamp in the eastern side of the county, and Gum Swamp and others of less extent are found in the south and west. The production of cotton, potatoes and rice divides with lumber

and naval stores the interest of its people. Marl is found in several parts of the county.

The climate is mild, and from its proximity to the Gulf stream, has some features of the semi-tropical; to such extent that the sugar cane is cultivated to small extent by almost every family for domestic use, and cane sugar has been successfully made. It is a climate and soil well suited to the grape, and wine has long been made on a considerable scale.

The marshes furnish large quantities of timber, shingles and staves, which are floated to market through the Waccamaw and other streams having their sources in the county; or by the railroads which traverse the county, the Carolina Central, the Wilmington, Columbia and Augusta, and the Wilmington and Chadbourne. In this county is the beautiful and extensive sheet of water known as Waccamaw Lake, 10 or 12 miles long, and from 6 to 8 wide, from 10 to 15 feet deep, with clear waters, abounding in fish, and on two of its sides with clean sandy beach. It is a frequent resort for pleasure parties from Wilmington and elsewhere.

Whiteville is the county seat, with a population of 372. Columbus contains 545,747 acres of land, valued at \$891,499, and 277 town lots, valued at \$70,333.

Of domestic animals it contains, horses, 671; mules, 614; goats, 2,619; cattle, 10,029; hogs, 30,433; sheep, 9,350.

Proceeds of taxation—State, \$4,384; pensions, \$661.71; schools, \$7,815.09; county, \$5,505.25.

Population—white, 11,804; colored, 6,027; total, 17,831.

CRAVEN.

Craven is a large, straggling county, stretching 60 miles along the lower reaches of the Neuse River, which passes through its centre and drains its entire area. The physical description of its territory, especially the southern and eastern sections, is identical with that of the two preceding counties. It consists largely of swamps, pocoson and oak flats. The section lying north of the Neuse River belongs for the most part in its agricultural features to the second subdivision, or long-leaf pine belt, having considerable tracts of pine flats and long-leaf pine ridges, with a soil often very sandy and unproductive. Near its upper margin it is penetrated by considerable tracts of swamp and semi-swamp lands, which project southward from Pamlico River and form properly the western extension of Bay River Swamp. Along the

southern shore of Neuse River the soil is mainly a close gray loam. The Great Dover Pocoson, occupying more than 100 square miles in its south-western angle, is elevated 60 feet above tide in its central part, and is very flat and sterile for the most part, but has strips of oak and pine flats radiating in all directions from the centre along the numerous streams.

Craven County is interesting historically, as being one of the original Proprietary counties. It was formed from Bath County, and derives its name from William, Earl Craven, one of the Lord's Proprietors. It is more interesting, perhaps, from its having been selected by the Baron DeGraffenreid as the locality of his Swiss Colony, which was planted here in the early years of the 18th Century, the point of settlement at the junction of the Trent and Neuse Rivers, having been named after Bern, the principal city of the Swiss Canton from which the colonists were transplanted. The colony did not flourish; yet in process of time it became the seat of refinement and high intellectual culture, and some of the leading men of North Carolina draw their origin from this place.

The city is beautifully situated at the junction of Neuse and Trent Rivers, the Neuse forming its eastern, and the Trent its southern boundary; both wide and beautiful streams. The soil upon which it is built is light and sandy, and gently slopes to the rivers; consequently the drainage is perfect. Owing to its situation at the junction of two wide rivers, and only 28 statute miles from the ocean, the winters are mild, and the summer heats are greatly modified by the daily sea breeze from the south-west and south-east.

The foreign trade, once extensive, but confined chiefly to the West Indies, has almost ceased to exist, and is replaced by the facilities afforded by the addition of steam to the development of interior water ways, and by the introduction of railroads; and is probably greater than it was in 1885, when the following table was published: 45,000 bales cotton, 3,000,000 shingles, 6,000,000 feet of lumber, 500 tons cotton-seed meal, 1,000 gallons cotton-seed oil, 200,000 bushels rough rice, 40,000 boxes canned goods, 6,100 casks milled rice, 1,000 casks spirits turpentine, 8,000,000 wooden plates, 250,000 bushels of corn, 10,000 barrels naval stores, 1,250 tons fresh fish, 40,000 barrels Irish potatoes, 70,000 boxes green peas, 25,000 boxes beans, 14,000 packages vegetables, 50,000 melons.

There has been a vast addition to the trucking business, a fact that will be noticed elsewhere.

Craven County possesses one valuable peculiarity in a land so near the flat sandy ocean beach: the entire county is underlaid either with marl or with a conglomerate of shells as hard and as durable as granite, which is used for building purposes and also for the manufacture of lime. On the Trent River it is found in inexhaustible quantities, and on the sides of the river it rises in banks to the height of fifteen or twenty feet.

Newbern, the county seat, and the only considerable town in the county, has a population of 7,843. It is beautifully laid off and well shaded, handsomely built, with fine public buildings, numberless fine residences, extensive business houses, mills and factories, and does a very extensive business in fish and trucking.

Craven County contains 296,564 acres of land, valued at \$635,563; and town lots valued at \$935,237.

Of domestic animals there are 1,029 horses, 586 mules, 10 jacks and jennies, 6,444 cattle, 422 goats, 12,528 hogs and 1,894 sheep.

Products of taxation—for State, \$7,255.20; pensions, \$939.35; schools, \$10,674.76; county, \$20,043.77.

Population—white, 7,175; colored, 13,358; total, 20,533.

CUMBERLAND.

Through the middle of Cumberland County, from its western margin, on the Moore County line, to the Cape Fear River, which crosses the eastern side of the county, lies a broad, irregular zone of pine barrens, with a very sandy and unproductive soil and an almost exclusive growth of long-leaf pine. On both sides of this zone, along the northern and southern sections of the county, with unimportant exceptions, and in the section eastward of the Cape Fear River, the soils belong to the class of gray sandy loams of the average upland piny woods. Near the river, on both sides, are large tracts of semi-swamp and oak and pine flats, which are very productive. Many of the streams which flow from the central pine barrens of the county contain narrow fringes of gum and cypress swamp, and the swampy tracts along the river often contain a considerable percentage of cypress. The turpentine and lumber interests are still important, though of diminishing importance each year with the gradual and certain consumption of the pine forests. The west side of the river, after rising from the river bottoms, is a rolling sandy county, comparatively unproductive, occasionally presenting broad flats of lands susceptible of high improvement, producing grains and fruits of market excellence. The river lands are devoted to cotton and corn.



TURPENTINE DISTILLERY.

THE SOUTHERN LUMBER CO. PHOTOGRAPH

Through the pine lands run numerous bold, strong and swiftly flowing streams, never diminished by drought and rarely excited by freshet. These, from the earliest settlement, furnished convenient mill-sites, and originated that active lumber industry so stimulating to the prosperity of the county and that of the towns on the Cape Fear River; and, upon the successful introduction of the cotton manufacture into the State, their power was speedily applied to the use of cotton-mills, which were built in the town of Fayetteville, on Cross and Blount's Creek, on Buckhead, Beaver Dam and Rockfish (two of these) Creeks, and on Lower Little River; and on all of these there are now large and flourishing cotton factories.

Cumberland County, of which Fayetteville is now the chief commercial city, was formed in 1734, and taken from that extensive territory then called "Bladen," and was named in compliment to William, Duke of Cumberland.

In 1736 a ship-load of emigrants came over from the Highlands of Scotland and located in Cumberland, on the Cape Fear River, near the mouth of Cross Creek, where they found a number of their countrymen already settled. For several years, and immediately after the battle of Culloden, 1746, large companies of the Highlanders continued to come, until their numbers became quite numerous; so that, in 1760, the settlement began to assume importance, and was formally set apart for a town. It was called "Campbellton," in honor of Mr. Farquhard Campbell, who was the principal personage among them.

Fayetteville, the county seat, is situated at the head of steamboat navigation on the Cape Fear River, 120 miles by water above Wilmington. Its position, both with relation to the seaport of Wilmington and to the interior, gave it an early and a very great importance, and after the Revolutionary war it became the chief receiving and distributing point for a greater number of the interior towns and counties. It lost much of its importance by the construction of railroads, which largely diverted its traffic to other points. By enlarging the operations of its business, which it was enabled to do by the addition of naval stores to the subjects of its business, and by the construction of several railroads, it is rapidly regaining what it had lost. It now has the Cape Fear and Yadkin Valley road, extending from Mt. Airy, in Surry County, passing through Greensboro and terminating at Wilmington, with a branch from Fayetteville to Bennettsville, S. C., a total of upwards of 325 miles. In addition to this, the Coast Line system has completed its short-cut from Wilson, N. C., to Florence, S. C., thus shortening the distance between North and South, on this great highway of travel, by sixty

miles. These additions to railroad facilities make Fayetteville an important railroad centre, through the good influences of which it must develop and prosper. Fayetteville is situated on the right bank of the Cape Fear River, and has a population of 4,222, and, including Cross township, of 6,072.

Cumberland County contains 494,751 acres of land, valued at \$1,382,000; and 1,105 town lots, valued at \$689,087.

Of domestic animals there are—horses, 1,110; mules, 1,258; jacks and jennies, 14; goats, 1,440; cattle, 7,993; hogs, 23,234; sheep, 5,541.

Products of taxation—for State purposes, \$7,795.24; pensions, \$1,124.14; schools, \$10,412.61; county, \$22,130.20.

Population—white, 14,952; colored, 12,369; total, 27,321.

CURRITUCK.

Currituck County is bounded northward by Virginia, eastward by the Atlantic Ocean, and southward mainly by Albemarle Sound, and is traversed north and south by Currituck Sound, which occupies about one-third of its territory. Between this sound and the Atlantic Ocean lies a narrow strip of sandy soil, which in its origin is a sand-dune of the breadth of from 1 to 3 miles, rising in some of its higher hillocks to nearly one hundred feet, covered generally with a small growth of pine, oak, hickory, dogwood, etc. The body of the county, particularly the northern section, is quite level, and has a growth of oaks, hickory and short-leaf pine, and a clay loam soil, but becomes swampy near the streams. There is a narrow belt of oak and pine lands also in the middle section. The narrow southern promontory which projects into Albemarle Sound is for the most part sandy, and except along the margin of the sounds, where it is more or less swampy, has a growth of long-leaf pine. With the exception of the dune hills, nearly the whole county lies below the level of 10 feet above tide.

The soils of this county are much better adapted to corn and rice than to cotton. The stalk of the latter grows luxuriantly, but does not fruit well. Fishing is also naturally a leading industry, and the county has great facilities for truck farming, which is rapidly acquiring importance.

The most abundant facilities exist for shipping by the sounds and canals and by rail.

The railroad from Norfolk to Edenton passes through Currituck County, and not only largely facilitates the general business of the county, but has proved an enormous stimulant to the business of truck

farming by the dispatch with which products of all kinds are put fresh upon the markets of the North. The connection of the waters of Currituck Sound with those of Chesapeake Bay, by which navigation for large steamers and sailing vessels is made practicable, has resulted in the large development of interior navigation, by which, to all practical uses, the passage through the inlets and the dangers of the coast may be entirely avoided. Besides the abundance of fish in the sounds and in the waters of Currituck County, the sound abounds in wild fowl in incredible numbers. Canvass-back and other ducks, swan, geese, brant and other game fowl, during the winter season, in numbers equalled nowhere on our coast, except, perhaps, in the upper waters of the Chesapeake; and the food they obtain being abundant and conducive to high flavor, this section is much resorted to by gunners for market supplies, and also by wealthy amateurs, who lease large bodies of land and water, and maintain their preserves at a large annual outlay.

Currituck County contains 107,647 acres of land, valued at \$344,842.

The number of domestic animals is—horses, 1,223; mules, 218; goats, 100; cattle, 3,379; hogs, 9,796; sheep, 2,079.

Products of taxation—for State uses, \$1,745 33; pensions, \$288.62; schools, \$1,586.61; county, \$3,753.15.

Population—white, 4,731; colored, 2,016; total, 6,747.

DARE.

The surface of Dare County is mainly water, the land, made up of a succession of long, narrow islands and peninsulas, being interpenetrated throughout by great bays, sounds and navigable bayous. The county is bounded eastward by the Atlantic Ocean, westward by Alligator River and southward by Pamlico Sound. The larger portion, on the main-land, is a swamp, which lies but a few feet above tide-level. Around the margins of this portion, next the sound, are narrow tracts of a few miles, in places, of drainable, cultivable land belonging to the general description of oak flats, having a gray-loam soil of a close texture. It is also fringed by considerable bodies of marsh land next the sound, from which large crops of cranberries are gathered. Roanoke Island, a part of this county, lies within the upper portion of Pamlico Sound, and is a narrow tract, twelve miles in length and from two to three miles in width. The upper portion is for the most part sandy, with a short-leaf pine growth, intermixed with oaks, and the southern half is mainly swamp and marsh. The easternmost part of the county, like the corresponding portion of Currituck, is a narrow fringe of sand

reef, properly a dune, which, as in the former case, was originally covered with a forest of short-leaf pine, oaks, hickories, dogwood, etc., with abundance of grape-vines. These have for the most part disappeared, leaving a tract of sand waves, which are moving, under the impact of the trade winds, constantly toward the south-west into the sound, and sometimes rise to a height of more than 100 feet. There is very little tillable land in the county.

This county was formed in 1870 from the county of Hyde, to which was added portions of Carteret and Tyrrell Counties, and derives its name from Virginia Dare, the first white child born on the continent. A very large portion of Dare County is swamp lands, and there are large bodies of it heavily timbered with cypress and juniper. On the side bounded by Pamlico Sound there are lands that will produce grasses, vegetables, corn, peas and potatoes. No portion of Eastern Carolina presents better facilities for cattle-raising, the feed being abundant and the climate mild. The chief industry is fishing, which is carried on to a great extent. Roanoke Island forms a part of this county. Upon this island is Manteo, the county seat, named in honor of the Indian chief Manteo, the first of his race in North Carolina to embrace the Christian religion. This island was the first place on the continent colonized by the English.

In this county, on the bank lying immediately upon the sea coast, is the far-famed place of summer resort, known as Nags Head. This delightful resort is noted for its health, the sea-bathing, and its fine drives.

Dare County has 147,469 acres of land, valued at \$173,105.

Domestic animals are—horses, 525; mules, 17; goats, 75; cattle, 1,981; hogs, 4,281; sheep, 1,433.

Product of taxation—for State uses, \$905.07; pensions, \$142.81; schools, \$1,416.18; county, \$2,735.77.

Population—white, 3,362; colored, 406; total, 3,768.

DAVIDSON.

This county lies midway of the breadth of the State and of the mid-land division, and on the northern border of the cotton belt. The average elevation is about 800 feet above sea-level—the northern end 1,000 and the south-western 600 feet—but is interrupted by ranges of hills which are 900 feet in height and upward. The county is bounded on the west by the tortuous course of the Yadkin River, whose numerous tributaries drain almost its entire surface, one of which, Abbott's Creek,



OLD-STYLE SOUTHERN COTTON PRESS.

traverses its middle section from north to south, while a multitude of smaller streams flow in a generally south-west course into the river. Both the river itself and these tributaries are generally bordered by tracts of bottom lands with a rich alluvial soil, covered by heavy forests of oak—largely white oak. There are considerable tracts of red-clay soil scattered through various portions of the county, which are covered with heavy oak forests. The eastern and northern margins, which lie along the elevated divides and swells between the greater rivers, contain mixed oak and pine forests, and have a soil which is generally a gray and yellow gravelly or sandy loam. A clay subsoil is found throughout the county. The cotton product of Davidson County is small, and is limited to its southern end. Its wheat crop is the largest in the State. The southern half of the county lies within the great gold belt, and numerous mines of gold and quite a number of copper and silver have been opened. The slate-hills of the south end are notable for their deposits of gold gravel, or placers.

The county early attracted attention through the great fertility of the soil, especially in the south-western part and that lying along the Yadkin River and its lower tributaries, and it was in this section that was formed the famous Jersey Settlement, or a portion of it—a name given by immigrants chiefly from New Jersey and portions of Pennsylvania—retaining to this day its name, its fertility and the agricultural skill and industry of its early settlers.

The county is traversed from north-east to south-west by the North Carolina division of the Richmond and Danville Railroad, and along the line are a number of thriving towns.

Lexington, the county seat, has a population given by the census of 1890 at 1,440. It contains several manufacturing establishments, and in addition acquires consequence from being in contiguity to several mines of the precious metals. Thomasville, with a town population given at 490, and a township population of 3,057, has been noted for good schools, and is the seat of a branch of the Orphan Asylum. It has also several flourishing manufactories.

Davidson County contains 353,062 acres of land, valued at \$1,718,061, and 481 town lots, valued at \$281,016.

Domestic animals are—horses, 3,558; mules, 1,573; jacks and jennies, 19; goats, 30; cattle, 8,450; hogs, 18,651; sheep, 9,514.

Product of taxation—for State uses, \$7,949.97; pensions, \$1,168.11; schools, \$8,779.01; county, \$9,046.87.

Population—white, 18,174; colored, 3,528; total, 21,702.

DAVIE.

This is a small county lying in the angle between the Yadkin and the South Yadkin Rivers. In the southern half of this county the soils belong largely to the class of red clays, and are covered with heavy oak forests, while the middle and northern portions have a mixed growth of oaks and pines, and a light-gray, sandy and gravelly soil. This section of the county is mainly devoted to the culture of tobacco. The river hills, flanking both the Yadkin and its chief tributaries, are quite broken, and have a productive gravelly loam soil and forests predominantly of oak. The elevation of the surface ranges from 700 to 1,000 feet, the average being about 850 feet above sea-level. The culture of cotton has recently entered the southern and western townships. The grain crop is quite large, and latterly, also, tobacco has been cultivated to a considerable extent in the north and west sections, the soils of a large part of its territory being well adapted to the higher grades. There are several valuable iron ore deposits in the county.

Along the Yadkin there is much fine bottom land, prolific in wheat, corn, and other small grains, forming an important proportion of the beautiful "Valley of the Yadkin," one of the most beautiful and productive on this continent, of perpetual fertility, maintained by frequent but not destructive overflows, the usually placid current permitting the gradual subsidence of a rich sediment which adds to the soil, as do the waters of the Nile to those of Egypt.

The county is now traversed by a railroad, at present in operation from Winston to Mocksville, and ultimately to be extended to some point on the Western North Carolina road. The northern and north-eastern sections are not far remote from the Winston and Wilkesboro Railroad; and the two lines give reasonably ample facilities for travel and transportation.

Mocksville is the county seat, and, including the township, contains 2,016 inhabitants.

Davie County contains 161,167 acres of land, valued at \$883,911, and 197 town lots, valued at \$71,175.

Of domestic animals there are—horses, 1,637; mules, 1,025; jacks and jennies, 5; goats, 2; cattle, 3,423; hogs, 7,678; sheep, 1,909.

Product of taxation—for State, \$4,084.27; pensions, \$613.42; schools, \$4,368.53; county, \$5,529.03.

Population—white, 8,769; colored, 2,852; total, 11,621.

DUPLIN

Adjoins Lenoir and Sampson, and, like them, has considerable variation of soil and surface. The northern portion consists of level piny uplands, penetrated with frequent streams margined with swamps. It is drained by North-east Cape Fear River, which flows southward through its middle section, and both this and the numerous tributaries are bordered by belts of alluvial and often swampy lands. Near its northern and eastern borders are two small pocosons, and within its southern section lies one-half of the great Angola Bay pocoson, an almost impenetrable jungle of the average character of pocoson lands, with fringes of rich swamp lands on the streams that issue from it. This pocoson is flanked on the westward toward the North-east Cape Fear River by a fringe of fertile white-oak flats and semi-swamp lands. Between the tributaries of the river, on the divides, are several tracts of sandy pine hills, which are very unproductive. The cotton lands, which are of limited extent, are the level piny woods of the usual description; but corn is a more valuable crop, and the product of potatoes and rice is of considerable importance. The county has still valuable resources in timber and turpentine lands. Marl (blue and white) is abundant, though but little used.

The county is traversed by the Wilmington and Weldon Railroad, and, with its water-ways, has convenient access to markets.

Kenansville, the county seat, has a population of 290; Magnolia, with a population of 460; Faison's, of 256, and Warsaw, of 400, are small towns lying on the Wilmington and Weldon Railroad. From Warsaw a railroad of 12 miles extends to Clinton, in Sampson County.

Duplin County has 436,472 acres of land, valued at \$962,787, and 402 town lots, valued at \$109,286.

Of domestic animals there are—horses, 1,505; mules, 688; jacks and jennies, 2; goats, 2,193; cattle, 8,759; hogs, 28,474; sheep, 5,849.

Product of taxation—for State uses, \$1,644.06; pensions, \$686 14; schools, \$6,055.44; county, \$5,475.68.

Population—white, 11,600; colored, 7,090; total, 18,690.

DURHAM.

This county formed the eastern part of the county of Orange, and by taking part of the north-western corner of Wake the present county was formed. This was made necessary by the rapid growth of the town

of Durham and the creation of peculiar interests to be best guarded and advanced by an administration of county affairs more directly addressed to those interests.

A large portion of the territory of this county lies in that sandstone belt or old sea-basin extending across the State from north-east to south-west, and which in this county assumes its greatest breadth. The northern part of the county is of a different geological period, with a stiffer soil. In the north eastern part the parent streams of the Neuse River unite—the Eno, Flat and Little Rivers—and their borders are all margined with broad rich bottom lands, an extent of fertile low grounds rarely found to such extent in the interior of the State, and productive in cotton, corn, wheat and other grains. In the hill country along their valleys, and in the gray lands towards the county of Granville, are found the best tobacco lands, producing that fine quality which has added so much to the fame of the State and the magnitude of the Durham tobacco market. The lands not in cultivation are covered with oak, hickory, short-leaf pine and other woods, but the timber is nowhere large except in the still uncleared bottoms, where the trees attain a magnitude scarcely surpassed anywhere in the State.

The staple crops of the county are cotton of fine quality, tobacco of the highest grade, wheat, corn, oats, &c. The lands on the river bottoms referred to, and in the valleys of New Hope Creek and its tributaries, produce large crops of the grains of all kinds, and also good crops of cotton, but are not adapted to fine tobacco.

Durham, the county seat, is almost the sole instance in this State of a town springing from a cross-road station to the importance of a city, all in less than the lapse of a generation. It was a petty village in 1870. It is now known all over the world. It is bisected by the North Carolina Railroad, and is the terminus of the Lynchburg and Durham, and of roads with through connections from Durham to Oxford and to Henderson. It is the seat of the largest smoking tobacco factory in the world—the original Blackwell and Carr; of the largest cigarette factory in the world—Dukes and son; of numerous other smoking tobacco factories; of a snuff factory; of sales warehouses, selling from 15,000,000 to 18,000,000 pounds of leaf a year, of a business which extends not only over the United States but over the Western Hemisphere, over the whole world; of a cotton manufactory; of a fertilizer factory; of other important industries; and it is also the seat of Trinity College, the chief Methodist College of the State; numerous churches, graded and other schools for both races; has water-works, gas and electric lighting and telephone exchange, and will soon resume the use of its street railway

system, for some time suspended; in addition to which it has all the advantages derived from the use of a belt line of railroad.

Durham County contains 168,035 acres of land, valued at \$1,459,054, and 665 town lots, valued at \$1,332,055.

Proceeds of taxation—for State uses, \$14,600.03; pensions, \$1,815.68; schools, \$13,560.59; county, \$23,804.36.

Population—white, 10,712; colored, 7,329; total, 18,041.

EDGECOMBE.

Edgecombe is a typical county of the long-leaf pine region. It is traversed through its middle portion by the Tar River, and is drained by its numerous tributaries. The soils are characteristically gray sandy loams, with a yellow to brown subsoil, and belong to the region of level piny uplands. Along the borders of the various streams are frequent and extensive tracts of alluvial lands, and on some of them occur cypress and gum swamps. This is one of the leading cotton counties of the State. It stands second among the counties of the State in its product of cotton, and its corn crop is also among the largest. The long-leaf pines, which were once found abundant over the whole surface of this county (and region), have been thinned until they are a subordinate element, so that the remaining forests are mainly of short-leaf pine and oak.

Both commercial fertilizers and the native marls have been more largely used than elsewhere in the State, and, in connection with compost, most effectively; so that Edgecombe has long been foremost in this special agriculture of the east.

Edgecombe was formed from Craven, in 1733, by Governor Burrington and his Council, and this action was confirmed by the Legislature which met in Edenton in 1741. During the period of the Revolution the county of Edgecombe was foremost in resisting the exactions of the mother country.

The soil of the county has every variety, from the black peaty soil to the stiff clay. The predominating soil is a light friable loam, being about four inches in depth, shading off in most places to a subsoil of yellow sand. When fresh, it is of a darkish color, wearing white by use when not well manured and properly cultivated. This soil is easy to till at all seasons of the year.

The variety, excellence and abundance of the products indicate alike the character of the soil and the intelligence and industry of the farmers. Those at an early period assisted or directed nature in the use of

her forces, and by the skilful application of fertilizers, and by the careful husbanding and skilful manipulation of all domestic stores of fertility, made Edgecombe conspicuous as one of the best and most profitably cultivated counties in the State. It became in time one of the leading cotton counties—in 1880 ranking next to Wake—and this relation it still holds. Its production of corn is also large, enough so to give it a leading importance as a corn-producing county. These constitute the most valuable field crops, but wheat, oats, rice, potatoes, peas, etc., are cultivated largely and successfully. Truck farming is enlisting enterprise and capital, and is remunerative. Dairy farming is pursued to considerable extent, with satisfactory results. Tobacco is of comparatively recent culture as a market crop. The census returns for 1880 gave a crop of only 550 pounds; those for 1890 placed the crop of the preceding year at 51,420 pounds. The effect of this increase in this and adjacent counties is to transfer to this section much of the interest once centered on the counties in the Middle Section, and to have necessitated the erection of sales warehouses, tobacco factories and all the agencies needed for the handling of the annually increasing crops.

A recent estimate (1891) says: "There were no less than 150,000 acres in cultivation in Edgecombe County during the past year. It is estimated that 50,000 acres in cotton yielded upward of 33,000 bales; that 1,200 acres in tobacco yielded 850,000 pounds; that 8,000 acres of peanuts produced 500,000 bushels; that 25,000 acres in corn, peas, etc., produced enough to supply the county for two years."

Tarboro, the county seat, is situated at the head of navigation on Tar River, and, with four railroad outlets, has commercial advantages surpassed by few towns in the State. It has a population of 1,924, or, including Princeville and Tarboro township, of 4,435.

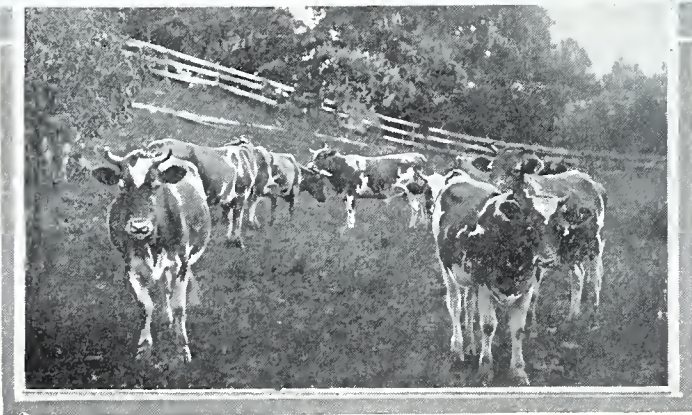
Rocky Mount, partly in Edgecombe and partly in Nash, and bisected by the line of the Wilmington and Weldon Railroad, has a population of 816. The branch road for Tarboro begins at this point. In the vicinity, at the Falls of Tar River, are the Battle Cotton Mills, the oldest in North Carolina.

Edgecombe County has 309,342 acres of land, valued at \$2,217,467; and 590 town lots, valued at \$633,839.

Of domestic animals there are—horses, 1,541; mules, 2,465; jacks and jennies, 3; cattle, 4,781; hogs, 12,762; sheep, 2,176; goats, 373.

Product of taxation—for State use, \$11,585.99; pensions, \$1,446.62; schools, \$13,266.24; county, \$13,301.94.

Population—white, 8,513; colored, 15,600; total, 24,113.



TEOSINTE AND GUERNSEY CATTLE.

FORSYTH.

Forsyth County lies west of Guilford, and is bounded on the west by the Yadkin River. Through its middle portion is a broad swell, or plateau, the divide between the waters of the Yadkin and Dan, with an elevation of from 1,000 to 1,200 feet, and having forests of oak, dogwood, sourwood, pine, etc. Its soils are light gray loams. The tributaries of the Yadkin, which drain the south-western section, abound in bottom lands of great fertility, and have heavy oak forests, interspersed with hickory, walnut, poplar, etc., while the middle, northern and eastern sections are characterized largely by gray sandy loam soils, with forests of oak and pine. This county shows an increasing product of the better and medium grades of tobacco.

Forsyth County was formerly included in the county of Rowan, which, in colonial days, comprised the extensive possessions of Lord Granville, grandson of Sir George Carteret, one of the eight original Proprietors of North Carolina. Seven-eighths of this Proprietary were ceded back to the Crown in 1729, in consideration of the payment of £2,500 to each of the Proprietors. Since the war of Independence, this tract has been divided and subdivided into various counties. Forsyth was formed from Stokes County in 1848, and named after Col. Benjamin Forsyth, who served in the Revolution and was killed in a skirmish in Canada in 1814.

This county is conspicuous for containing within its limits the tract of land known as "Wachovia," granted to the *Unitas Fratrum*, or United Brethren of the Moravian Church, by Lord Granville, August 7, 1753, and thus named because of the supposed resemblance to a valley of that name in Austria, in the possession of Count Zinzendorf, the great patron of the Brotherhood. In 1849 fifty-one acres of the Wachovia tract were sold to the newly formed county for \$5 per acre, upon which the plan for the county town was laid out and the court-house and jail erected, under the supervision of the late Francis Fries.

Tobacco is the staple produce of agriculture, as well as manufacture. Very little was grown, however, prior to 1870, and none at all earlier than 1853, beyond a few small patches for home consumption. In 1875 the yield had reached 1,500,000 pounds, and to-day borders closely on 4,607,325 (census returns of 1890). Wheat grows finely; so do corn and oats and other grains, and also the grasses. Fruits, vegetables and melons grow in the greatest profusion, and of almost every variety. The dried fruits of this section of the State enjoy the reputation of the

highest quotations in the New York market. Grapes thrive, and the early settlers of the county, the Moravians, made a record on their books that in one year they had made nine hogsheads of wine from the wild native grape.

A permanent influence was exerted upon the character of Salem, and also of its sister town, Winston, by the early custom of requiring each man to learn and pursue some trade or occupation as a means of livelihood, and this has begotten and perpetuated those habits of industry, thrift and skill which have made that people so self-reliant and the founders of their own fortunes. It adapted them also to those mechanical industries which they have pursued with so much skill and success.

In industrial fortune Salem and Winston are closely joined, and are so intimately associated that one cannot be named without the other. The former is still the principal seat of the Moravian Church in this State; and it is here that the famous Female Academy, now one hundred years old, has flourished and diffused its usefulness through all the States of the South and West. In Salem are the cotton and woolen mills of F. & H. Fries, iron works and pottery, and at Waughtown are the wagon works of the Nissens, these establishments the largest of their kind in the South.

Winston, the county seat, a town separated only from Salem by the width of a street, has grown with great rapidity and to great wealth through its adaptation to the tobacco manufacture and to the sagacity of its people in applying their advantages. Without going into details, it will be enough to say that in the 29 factories of plug tobacco there was manufactured product amounting in value to \$3,600,000, and in four warehouses was sold leaf tobacco to the amount of 16,086,373 pounds, of the value of \$1,612,669.75. Of manufactured tobacco there was sold the value of \$11,000,900, and the internal revenue tax paid was \$660,005.52.

The population of Winston is, including Salem, 11,300, or Winston 8,018; Salem, 1,711. The local census makes a much larger claim, and, no doubt, justly. Kernersville has a population of 900.

Winston is well supplied with railroads, and has become an important railroad centre. The north-western division of the North Carolina Railroad, beginning at Greensboro, had for a long time its terminus here, but, by the addition of the road to Wilkesboro, has been extended up the valley of the Yadkin a distance of 75 miles. Winston is also the southern terminus of the Roanoke and Southern, a line of 125 miles in length. This road has become the property of the Norfolk and Southern. A road has also been built from Winston to Mocksville, in Davie County.

Forsyth County contains 237,682 acres of land, valued at \$1,264,388, and 2,083 town lots, valued at \$1,725,028.

Of domestic animals there are—horses, 2,602; mules, 1,225; jacks and jennies, 16; goats, 39; cattle, 5,671; hogs, 9,353; sheep, 1,991.

Product of taxation—for State uses, \$18,238.83; pensions, \$2,192.27; schools, \$19,486.44; county, \$17,486.60.

Population—white, 19,433; colored, 9,001; total, 28,434.

FRANKLIN.

The western portion of this county is a rolling hilly country, with clay a predominant in the soil, and bearing a natural growth of oak, hickory and other hard woods, and, when cultivated, producing the cereals, cotton and tobacco. The eastern, and especially the south-eastern section, contain a considerable proportion of long-leaf pine as a constituent of the forests. This county is drained by Tar River and its tributaries. The middle portion belongs to the region of oak and pine gravelly and sandy hills, and the western end rises into the oak uplands. The large cotton product of this county is of recent date, but here and in the adjoining counties it has greatly increased in the last dozen years. The western half is largely devoted to the culture of tobacco.

By a division of old "Bute," one of the Colonial counties, in the year 1779, Franklin and Warren were established. The name, "Bute," was cast aside on account of Earl Bute's hostility to the cause of liberty, and the names, Franklin and Warren, were given to the divided territory in honor of the distinguished philosopher and statesman, Dr. Benjamin Franklin, and Dr. Joseph Warren, the patriot-hero, who fell at Bunker Hill.

The Raleigh and Gaston Railroad passes for fourteen miles through this county, and in addition to the facilities afforded by it, a road has been constructed from Franklinton, on the Raleigh and Gaston road, to Louisburg, the county seat, a distance of 12 miles.

The county singularly abounds in minerals, considering its close proximity to the tertiary belt. Asbestos and mica of good quality are found, and granite of fine quality, susceptible of high polish, is found abundantly in some localities. But the most remarkable of all the discoveries is that of gold. In the north-eastern portion of the county, near where it corners with Warren, Nash and Halifax, is situated the celebrated Portis gold mine, which received its name from its original owner, John Portis, in the mud daubing of whose log cabin the shining

particles were first discovered. It has been successfully worked for nearly three quarters of a century, more than a million of dollars having been taken from it. Most of this large amount was washed from the top soil and gravel beds just underneath at a small cost. Stamp mills and other machinery for crushing the inexhaustible beds of quartz have been but recently introduced. This quartz, when crushed and assayed, has been found to carry from \$6 to \$12 worth of gold to the ton. And several other discoveries of nearly equal value have been made in the county.

As before stated, cotton and tobacco are the chief crops raised for market.

The lowlands upon the river and smaller streams are well adapted to the production of corn, small grain, the grasses, and rice, only requiring proper drainage and cultivation to make bountiful crops, one hundred bushels of corn having been raised to the acre.

The uplands are of a variety of soils, in the lower part of the county light sandy, with clay subsoil; in the middle and upper portions granite, mainly with red and yellow clay subsoil.

Large areas of these uplands, well adapted to the growth of corn, cotton, tobacco, wheat, rye, oats, peas, beans, sweet and Irish potatoes, clover and grass, produce, with proper cultivation and manuring, most satisfactory yields.

Louisburg, the county seat, has a population of 667. Franklinton, on the Raleigh and Gaston Railroad, has 583.

Franklin County has 292,264 acres of land, valued at \$1,779,065; and 369 town lots, valued at \$270,986.

Of domestic animals it has—horses, 1,753; mules, 1,069; jacks and jennies, 3; goats, 225; cattle, 6,601; hogs, 11,884; sheep, 3,486.

Product of taxes—for State uses, \$7,640.08; pensions, \$1,066.06; schools, \$9,485.30; county, \$10,338.81.

Population—white, 10,755; colored, 10,335; total, 21,090.

GASTON.

Gaston, a small county, lies on the southern border of the State, and is bounded eastward by the Catawba River, whose tributaries drain its entire surface. In the southern section are several small mountain chains and spurs, the highest of which, Kings Mountain, reaches an altitude of nearly 1,700 feet above sea-level. Most of the county is quite broken, and partakes of the character of the Piedmont division. It is characterized by mixed forests of oak and pine, and by gray and

yellow gravelly soils of moderate fertility, with occasional areas of red-clay soils. In the north-western section are the largest tracts of oak and hickory forests, with their corresponding red-clay soils.

There are many valuable beds of iron ore in the county, and the manufactures of cotton, and formerly of iron, have attained considerable importance. It is one of the oldest iron manufacturing regions of the South, some of its furnaces dating back nearly one hundred years. In water-power it has superior advantages. It has also several noted gold mines. The waters of the Catawba River provide great water-power, long utilized for manufacturing purposes; and, lying within the cotton belt, a stimulus has been given to the manufacture of cotton goods to such extent as to have created independence of the rude powers of nature. Numerous factories, operated by steam, have been erected at Mount Holly, Gastonia, Stanley Creek and other points.

Within this county rises the eminence, seen far and wide, of Kings Mountain, the scene of one of the most remarkable and, in its consequences, one of the most decisive battles of the Revolutionary war.

The county is well supplied with railroad facilities. The Carolina Central passes through it from south-east to north-west, the Chester and Lenoir Narrow Gauge from north to south, and the Charlotte and Atlanta Air-Line through the center in an undulating line from east to west. This has given every section access to market, and has stimulated industrial activity in marked degree, resulting in the building and prosperity of a number of towns and villages. Among these are Dallas, the county seat, with a population of 445; Gastonia, a thriving manufacturing town on the Air-Line road, with a population of 1,050; Mount Holly, 475; Lowell, a manufacturing village, with about the same number.

The staple crops of the county are cotton, wheat and corn; and tobacco has been successfully tested as a profitable addition. Fruits, and especially the grape, succeed well.

Gaston County has 226,519 acres of land, valued at \$1,482,963; and 539 town lots, valued at \$160,535.

Of domestic animals there are—horses, 1,104; mules, 1,185; jacks and jennies, 11; goats, 42; cattle, 5,104; hogs, 8,204; sheep, 3,800.

Product of taxation—for State uses, \$7,242.36; pensions, \$1,028.64; schools, \$7,504.57; county, \$8,298.31.

Population—white, 12,927; colored, 4,837; total, 17,764.

GATES.

Gates County lies between the Chowan River and the Dismal Swamp, of which it includes a considerable section. The body of the county consists of level piny uplands, with a sandy loam soil. It has a narrow strip of very sandy long-leaf pine land near the Chowan River, and also in the south-eastern corner of the county. Along the Chowan River and its tributaries are tracts of cypress swamp from one to two and three miles wide. Near the smaller streams are narrow tracts of pine and oak flats, having a gray-clay loam soil. Marl is found in the banks of the Chowan River and in the southern end of the county.

The Blackwater River (lower down assuming the name of Chowan), flowing along the western border, a deep, tortuous but navigable stream, used by steamboats of considerable size as high up as Franklin, Va., has added greatly to the business, convenience and profit of the inhabitants, but the construction of a railroad across the county, forming other and speedier connections, has diminished its importance.

The products of the county are those of the section—cotton, corn, wheat, peas, potatoes, etc.; and an increased inducement to truck farming tends to give new character to the agriculture of the county.

There is large attention given to timber, lumber, shingles and staves.

Gatesville, the county seat, is a village of 232 inhabitants.

Gates County contains 193,434 acres of land, valued at \$614,121; and 45 town lots, valued at \$29,290.

Of domestic animals there are—horses, 1,297; mules, 521; jacks and jennies, 5; goats, 839; cattle, 5,501; hogs, 12,582; sheep, 2,270.

Product of taxation—for State use, \$2,818.33; pensions, \$389.26; schools, \$4,053.81; county, \$3,323.59.

Population—white, 5,539; colored, 4,713; total, 10,252.

GRAHAM.

Graham County, lying south of the Tennessee River, is bounded on the west by the Smoky Mountains, which separate it from the State of Tennessee. The river of the same name separates it from the county of Swain, the Long Ridge from the county of Cherokee, and a high and almost precipitous line of mountains from the county of Macon. It is largely isolated on account of difficulty of access, and therefore retains, in large degree, its primeval wildness. The surface in the interior of the county is intersected with numerous streams, tending to a

union with the Cheoah River; and the united waters, a large, bold stream, flow into the Tennessee. Along these waters are stretches of fertile valley, and these constitute at present almost all the land reduced to cultivation. The remainder of the county is still clothed with forest composed of all the varieties of trees found in the mountains, and of the greatest size. This forest is now invaded by timber cutters from the North-western States, who avail themselves of freshets to float their logs down the smaller streams into the Cheoah, thence into the Tennessee, down which they float through the mountain rapids, until in calmer waters below they are caught and detained in booms.

Agricultural industry is limited chiefly to domestic uses, difficult access to market giving little reward to industry. The soil everywhere is fertile, as indicated by the size of the trees and density of the forests. The chief remunerative pursuit of the inhabitants is in the rearing of cattle on the native ranges, from which they are driven in the fall, to be transported now by railroad to distant markets.

Robbinsville, a small village, is the county seat.

Graham County has 307,635 acres of land, valued at \$452,724; and 29 town lots, valued at \$4,950.

Of domestic animals there are 360 horses, 130 mules, 3 jacks and jennies, 3,825 cattle, 3,705 hogs, 2,729 sheep.

Product of taxation—for State uses, \$1,506.07; pensions, \$213.07; schools, \$2,705.94; county, \$2,801.05.

Population—white, 3,137; colored, 137; Indians, 161; total, 3,435.

GRANVILLE.

Granville County lies on the Virginia border, and is drained partly toward the north by the tributaries of the Roanoke and partly (in its middle region) by the Tar, and in its southern portions by the Neuse. In its central and higher portions, where it is 500 feet above tide, it is comparatively level and rolling, and has for the most part a gray gravelly loam soil, with here and there small tracts of red clay. Among the most productive soils is a level body of oak and hickory land in the northern section, with a dark gravelly loam soil. Smaller tracts of similar character occur near the middle, and also on the southern border. The southern portion of the county, along the divide between the waters of the Tar and Neuse Rivers, is another comparatively level bench of land, belonging mainly to the class of gray sandy loams, derived in large part from the underlying Triassic rocks (red sandstone).

These alternate with gray gravelly loams. The forests are of oaks, hickory and dogwood, intermingled with short-leaf pine.

The principal agricultural product of this county is the gold-leaf tobacco. The gray and light-colored granite soils of the eastern, middle and western sections, as well as the last-named (Triassic) soils, are noted for the high grade of tobacco which they produce. This is also a large grain-growing county, its aggregate reaching nearly 750,000 bushels. Granville has long been conspicuous for its leadership in tobacco culture, and, after the discovery of the process of curing the "bright leaf," for a long time had no equal in its success in the perfection of that process, the result being a substance of unrivalled beauty and surpassing value. The high prices habitually received greatly advanced the value of lands in some sections, and purchasers of such qualities of land were enabled to obtain full title out of the proceeds of the sale of a single crop. The estimates (for they are, at best, only estimates) of the census investigation of 1890 are misleading, and only approximate the truth in giving the crop of 1889 at 4,170,071 pounds. In another chapter of this book, statements obtained from other sources will be made to demonstrate the existence of a much larger crop for Granville, as well as for the State of North Carolina. Besides tobacco, Granville produces some cotton, wheat, corn and other grains and fruits.

Valuable copper ores are found in the northern part of the county, and recently exceedingly valuable iron ores have been discovered in the south-eastern section. These will be noticed more fully in the chapter on ores and minerals.

Oxford, the county seat, has a population, by the last census, of 2,097. It is the center of an active tobacco business, both in manufacture and sale, the warehouses, of which there are several, handling yearly from eight to ten million pounds. Here is the Orphan Asylum, supported jointly by the Masonic Fraternity of North Carolina and by the State; the Baptist Female College, and Horner's Classical and Military School. Oxford is connected with the Raleigh and Gaston Railroad at Henderson, and with Richmond, Va., by a road running from that city via Keysville, Va., to Durham.

Granville County contains 326,108 acres of land, valued at \$1,776,967; and 526 town lots, valued at \$925,712.

Of domestic animals there are—horses, 2,675; mules, 1,218; jacks and jennies, 10; goats, 204; cattle, 5,603; hogs, 11,305; sheep, 3,510.

Product of taxation—for State, \$10,221; pensions, \$1,419.42; schools, \$11,023.03; county, \$15,537.88.

Population—white, 12,122; colored, 12,362; total, 24,484.

GREENE.

The small county of Greene, adjoining Pitt on the south, and drained by the Contentnea (which crosses it through the middle) and its numerous tributaries, has the same general features, both as to its natural characteristics and as to the development of its agriculture, as Edgecombe County, but there are considerable areas of sandy pine lands and pine flats in the eastern angle and in the southern section. Its streams are also, for the most part, bordered by narrow fringes of alluvial land and of gum and cypress swamps. It has also along the courses of some of its tributaries considerable tracts of semi-swamp land, characterized by a dark-gray loam of great fertility, notably Lousin Swamp, near the southern border. Like the preceding counties, Greene finds marl and compost essential to successful cotton farming. There are still considerable areas of pine and cypress timber in the county.

Much of the land of Greene is suitable to cotton, the production of which is between 8,000 and 10,000 bales per annum. It is also a productive corn county, as would be indicated by the character of its best lands, reclaimed from swamps. Peas, potatoes, rice and other grains constitute the chief crops. Within a brief period tobacco has been found worthy of cultivation, soil and climate both inviting to the production of the highest grades. The Census Report gives the crop of 1889 at 6,650 pounds, doubtless below the truth, but a large gain over the previous decennial report, which was only 706 pounds.

Greene County has 157,465 acres of land, valued at \$1,055,541; and 163 town lots, valued at \$81,107.

Of domestic animals there are—horses, 839; mules, 974; goats, 169; cattle, 1,179; hogs, 8,768; sheep, 265.

Product of taxation—for State use, \$4,192.51; pensions, \$599.86; schools, \$4,524.47; county, \$8,716.19.

Population—white, 5,281; colored, 4,758; total, 10,039.

GUILFORD.

Guilford County lies in the middle of the midland plateau, and near its highest part, on the water-shed between the Cape Fear and Dan Rivers, which crosses its territory nearly midway in a west and east direction at an average elevation of between 800 and 1,000 feet above tide. In its physical characteristics and its agricultural features, this county may be taken as a typical average of this region. This elevated

swell of land between the water-courses, with its projections at right angles between the main tributaries of the above mentioned rivers, is characterized by quite a uniform forest growth and soil, both of which may be taken as representative of these features for the major part of the midland division. Its forests consist mainly of oaks of various species and hickory, with a subordinate growth of short-leaf pine scattered quite uniformly over most of its area. Along its river and creek bottoms, which are in many parts of the county extensive, and in the south-eastern section of the county, even on the uplands, are heavy forests of oak, intermingled with hickory, walnut, poplar, maple, etc. These lands have generally a reddish clay loam soil. The soil of the higher and broad-backed ridges and swells is quite uniformly a yellowish sandy and gravelly loam, underlaid by a yellow and red clay subsoil. The cotton zone barely touches the southern border, the chief crops of the county consisting of grains and tobacco, grown mostly in the northern half of the county. Gold, copper and iron are found in many places, and have been mined on a considerable scale.

The county of Guilford was formed in 1770 from Rowan and Orange Counties, and was named in honor of Lord North, who was Earl of Guilford. In 1808 the county seat was removed from Martinsville to Greensboro (named in honor of General Greene), five miles south-east of the site of the battle-ground. This battle-ground was the site of the memorable "battle of Guilford Court House," fought on the 15th of March, 1781, between the American forces under Gen. Nathaniel Greene, and those of the British under Lord Cornwallis, the latter nominally victorious, but in effect defeated, soon abandoning the field and rapidly retreating to Wilmington, thence to Yorktown, Va., where they eventually surrendered to General Washington, thus closing the war and securing American Independence. A monument recently erected on the battle-ground commemorates the real victory.

In addition to cotton and tobacco, there are produced corn, wheat, oats, rye, and clover and grass, and fruits of all kinds congenial to the climate. Apples, peaches, pears, quinces, grapes, plums, apricots, nectarines, cherries, strawberries and melons grow in richness and perfection unsurpassed in any latitude outside the tropics. The dried and green fruit industry is very remunerative. Not less than 1,115,000 pounds of dried fruits are annually shipped from this county.

The peculiar adaptation of the soil and climate to the cultivation and perfection of fruits has stimulated the special industry of the nursery business; and the large nurseries near Greensboro, chiefly the Pomona Nurseries, grow more fruit and vines than any other county

in the South, and their sales extend all over the State and all over the South and West. Tobacco, within the past ten years, has doubled in quantity and in quality. Even the unsatisfactory estimate shows the comparison between 1879 and 1889 to be 422,716 pounds for the former and 918,723 pounds for the latter, resulting in the creation of an important sales market and well established factories in Greensboro.

Manufacturing establishments are diffused throughout the county. Among these are two cotton factories at Greensboro, one at High Point and one at Gibsonville; a hosiery factory at Greensboro, two foundrys, a stave factory, spoke and handle factory, and various other establishments. In addition to these is the steel and iron works for the manufacture of pig-iron, the only one now in the State, which will soon be in operation. Reference to this will be made subsequently. There are numerous merchant mills in the county.

Railroad facilities are numerous, and, passing through Greensboro, constitute it an important railroad centre. The Cape Fear and Yadkin Valley Railroad, passing from tide-water to the mountains, runs through the county from south-east to north-west, and goes through eight townships. The North Carolina Railroad, passing from the seaboard to the Tennessee line, runs through the county from east to west, and through seven townships. The Richmond and Danville comes in from the north, runs to Greensboro, and passes through three townships. The North-western North Carolina Railroad starts at Greensboro and runs west through three townships.

Greensboro, the county seat, situated, as above stated, at the focal point of several railroads, has become of great importance. Its population is upwards of 6,500 since Morehead has been added to the wards north of the Richmond and Danville Railroad. It has large hotels, churches, a female college, a colored college, a female industrial school nearly completed, waterworks, gas and electric lighting, telephones, etc.

High Point, fifteen miles west of Greensboro, has a population, including High Point township, of 3,481, and Jamestown and Oak Ridge are smaller villages.

Guilford County has 397,905 acres of land, valued at \$2,359,146; and 1,302 town lots, valued at \$1,241,939.

Of domestic animals there are—horses, 3,486; mules, 1,483; jacks and jennies, 25; goats, 50; cattle, 10,752; hogs, 12,739; sheep, 6,741.

Product of taxation—for State uses, \$15,163.78; pensions, \$1,967 39; schools, \$17,797.48; county, \$14,539.65.

Population—white, 19,820; colored, 8,232; total, 28,052.

HALIFAX.

Halifax County lies between the Roanoke River on the north, and Fishing Creek, one of the confluent of the Tar River, on the south. The eastern and larger part of this county belongs to the normal type of upland pine woods; the western third to the oak uplands. Long-leaf and short-leaf pines are commonly mingled with a subordinate growth of oaks, hickory, dogwood, etc. The surface is generally level, or a little rolling, with small, often abrupt, hills and ravines near the streams. The soil is a gray sandy loam, with a yellow to brown subsoil. The creeks and larger streams nearly all flow southward into the Tar River, the water-shed, according to a curious topographical law previously referred to, lying quite close to the south bank of the Roanoke. The western section belongs in large part to the oak uplands region, having its characteristic gray, yellow and reddish clay loam and sandy loam soils and rolling surface, and predominant oak forests, with an intermixture of short-leaf pine. The crops of this section are largely grains (corn, wheat, etc.) and tobacco. The bulk of the cotton product is made in the eastern section. The streams in the eastern section have often narrow swampy tracts of gum and cypress along their margins, but there are extensive alluvial areas or bottoms on the larger rivers, especially the Roanoke, whose bottoms are of unsurpassed fertility. In the great bend of Scotland Neck are some of the finest cotton lands of the State. Marl is abundant in the middle and eastern sections. Halifax is one of the most prosperous cotton counties, and produces very large crops of grains besides, chiefly of corn.

Like others of the eastern counties, Halifax has largely increased the culture of tobacco, the quality being of the best. In 1879 the census return gave the production at 8,427 pounds; in 1889 at 90,714 pounds.

The work of the Roanoke Navigation Company, embraced chiefly in a canal from Gaston to Weldon, overcoming the succession of rapids between those points from navigable water above to steamboat navigation below, is now owned by a company which has opened the canal so as to avail itself of water-power for manufacturing purposes, eventually to obtain such power as will be unequalled in the United States.

The county of Halifax has every needed facility attained by railroads, the first railroads in North Carolina extending from points in this county to the then chief towns in this State and the leading commercial towns in Virginia. The Raleigh and Gaston road was begun in 1836, and completed to Raleigh, and also connected, by a road to Belfield, Va., with the line built in 1833 from Blakely, in Northampton County, to Petersburg, Va.; and the Wilmington and Weldon road, also begun in 1836, and completed to Wilmington, was also early connected with Portsmouth, Va., by the Seaboard and Roanoke, extending from Weldon, from which point also connection was made with Petersburg by addition to the road built to Blakely. Subsequently, a road (a branch of the Wilmington and Weldon road) was built to Scotland Neck, and this has recently been extended to Kinston, thus making two nearly par-

allel lines belonging to that company, and adding very greatly to the prosperity of Halifax County.

Halifax, the county seat of Halifax County, is situated on the Roanoke River, a town of great historic interest, but now of small importance. It has a population of 312. Scotland Neck, growing into consequence since the war, has 776; Enfield, 563; Littleton, 303; Weldon, 1,216; and Ringwood and Brinkleyville are small but interesting villages.

Halifax County has 400,185 acres of land, valued at \$1,894,643; and 1,138 town lots, valued at \$489,900.

Of domestic animals there are—horses, 1,926; mules, 1,523; jacks and jennies, 3; goats, 194; cattle, 6,692; hogs, 11,013; sheep, 2,552.

Product of taxation—for State uses, \$9,212.50; pensions, \$1,297.33; schools, \$12,505; county, \$10,006.08.

Population—white, 9,614; colored, 19,924; total, 23,908.

HARNETT.

Harnett County lies on both sides of the Cape Fear River, on the north-western margin of the long-leaf pine belt. Near the river, and for several miles on both sides, its surface is quite hilly in its upper portion, and here the soil is of the intermediate character described as oak and pine sandy and gravelly hills. On the tops of the ridges and river hills these soils are gray sandy loams, but on the slopes they approach the character of clay loams, and are covered mainly with forests of oak and short-leaf pine. The body of the county belongs strictly to the long-leaf pine belt, and has the general characteristics of that region. The western section, as well as a narrow belt in the middle, near the south bank of the river and some portions of the south side, partakes in part of the character of the pine barrens. Near the river, and along its principal tributaries from the west, and in the angles between these and the river, are wide tracts of gray, clayey, silty lands (oak and pine flats) and occasional narrow strips of gum and cypress swamp. Cotton production is the principal industry of the county, but grain, lumber and turpentine are also important products.

The Cape Fear River passes through the county, but it affords no facilities for navigation, except in giving passage during high water to rafts of timber and lumber.

The branch of the Wilmington and Weldon Railroad from Wilson to Florence, S. C., by way of Fayetteville, passes through the county, and has greatly stimulated industrial activity, several thriving and busy towns having been built along the line, and the agricultural and naval store interest greatly stimulated.

Lillington is the county seat, a small village. Dunn, on the line of the "Short-cut" Railroad, is the largest and the most important business point. It probably contains 600 inhabitants.

Harnett County contains 346,677 acres of land, valued at \$758,450; and 442 town lots, valued at \$67,236.

Of domestic animals there are—horses, 759; mules, 883; goats, 2,082; cattle, 6,943; hogs, 18,124; sheep, 4,760.

Product of taxation—for State uses, \$3,476.28; pensions, \$543.89; schools, \$5,463.78; county, \$4,208.25.

Population—white, 9,453; colored, 4,247; total, 13,700.

HAYWOOD.

This large and beautiful county is as remarkable for the long extent of its mountain ranges and the height of its numerous peaks as it is for the extent of its valley system and the fertility of its soil. The Pisgah range skirts it partly on the east, culminating in the pyramidal cone of Pisgah Mountain, rising to the height of 5,750 feet. This range, interrupted by a depression of several miles, is continued by the New Found range, extended to the Tennessee line. A spur or range projects northward between the East and West Forks of Pigeon River, the highest peak of which is Cold Mountain, rising to the height of 6,063 feet. Along the western border extends the massive line of the Balsam Mountains, in this county attaining their greatest elevation. Here are fifteen peaks of more than 6,000 feet in height. Richland Balsam is 6,425 feet high, and Double Spring Balsam is 6,380 feet. The Western North Carolina Railroad, by the Murphy branch, crosses this range at Scott's Creek Gap, at an elevation of 3,357 feet.

The mountain lands, except on the summits of the higher ranges, which are densely wooded with the balsam fir, are very fertile. The sides and summits of the lower ridges, when cleared, prove adapted by nature to the production of grasses in great luxuriance. Herds grass, timothy, red-top and clover take readily to the soil. Within the last two years the genuine Kentucky blue grass has appeared spontaneously, as did the *lespedeza*, or Japan clover, and will greatly add to the value of the mountain pastures. Stock-raising is followed to considerable extent, and efforts are made to improve the value of the breeds. Sheep thrive, but are mostly of native breed, with little general effort at improvement. In the deeper mountain recesses their increase, and even their existence, is controlled by the presence of wolves, which are found in considerable numbers.

Fruits grow to great perfection, and the apples of Haywood are famous all over the mountain regions.

Tobacco, in portions of the county, has become an important article of industry, and the superiority of the product must tend to the increase of culture, the bright yellow tobacco proving little inferior to that of Granville, while the darker grades have characteristics in common with the famous Henry County tobacco of Virginia. The northern section of the county is best adapted to the successful culture of tobacco.

In mineral wealth there has been no development, except in mica, which has been worked to considerable extent at Micadale, near Waynesville. Gold, copper, iron, lead, asbestos and other minerals are known to exist, but no mines are worked.

The mountains are clothed to their summits with forests of a great range of species. On the lower slopes and in the rich coves, besides the usual characteristic oaks, hickories, cucumbers, poplar, chestnut, etc., are found in abundance walnut, black locust, cherry and ash, and a little higher sugar maple, linden, black birch and beech, and on the highest ranges two species of fir. Since the advent of the railroad, lumbering is rapidly becoming an important industry.

Waynesville is the county seat, with a population given by the census of 1890 at 455. It is finely situated in the valley of Richland Creek, overtopped by some of the grandest summits of the Balsam Mountains. It is a noted summer resort, and in the vicinity are the White Sulphur Springs, equipped with a commodious hotel surrounded with ample grounds. The Murphy branch of the Western North Carolina Railroad passes through Waynesville.

Clyde, a thriving village, and Pigeon River town, both on the railroad, are growing towns.

Haywood County has 268,498 acres of land, valued at \$990,252; and 199 town lots, valued at \$95,112.

Of domestic animals there are—horses, 1,748; mules, 676; jacks and jennies, 19; goats, 24; cattle, 10,393; hogs, 12,663; sheep, 6,888.

Product of taxation—for State uses, \$4,210.14; pensions, \$640.37; schools, \$5,861.10; county, \$10,052.40.

Population—white, 12,829; colored, 517; total, 13,346.

HENDERSON.

Henderson County is a continuation southward of the French Broad valley described in Buncombe County, and its topographical features are very similar, except that there are broader areas of comparatively level and undulating lands, but of less fertility, the soils being predominantly light gray gravelly loams, and its forests being mixed growths of oak and pine, with hemlock and chestnut. Near the water-courses in the mountain coves are found walnut, cherry, maple and occasionally white pine.

This county is divided by the Blue Ridge into two unequal parts, a considerable portion of it lying on the south, on the South Carolina line, and on the east bounded by Polk County, being in the Piedmont Section. The remainder, or mountain plateau, is bordered on the east and south by the same range, and intersected at wide intervals by low ranges of mountains extending toward the north-west, it is closed in by the Pisgah range, the peak of that name being the common centre for the county lines of Henderson, Transylvania, Buncombe and Haywood.

The county is intersected by numerous streams. Green River, at the foot of the Blue Ridge, flows eastward between that range and the Saluda Mountains, and is an affluent of the Broad River, flowing south into South Carolina. The French Broad flows through the north-western part of the county, and, receiving the waters of Mills River, Mud Creek and other considerable streams, becomes a bold, broad stream,

which, by appropriations from the Government, has been made navigable for small steamboats.

A remarkable feature of this county is the apparent great depression of its surface, and the width of the valleys along the streams, assuming, as on Mud Creek, the character of wide swamps. The whole interior of the county presents the aspect of one valley, into which project, like elongated promontories, small ranges of mountains. Looking northwest from Hendersonville, the eye sweeps over a level expanse of twenty miles, closed at that distance by the Pisgah range. This depression, however, is apparent rather than real, the most depressed portions being above the mean level of the Blue Ridge plateau, 2,250 feet, and presenting the appearance of a broad uplifted valley.

The soil of this county is good, though not so fertile as other mountain counties, with the exception of the valleys, which are productive in grains and grass. Fruits are abundant and excellent. The mineral wealth of the county is not great. Limestone of excellent quality for the kiln is found on the west side of the French Broad, and is largely burned for the Asheville market.

The agricultural industry of the county is quite largely directed to the cultivation of cabbage and other vegetables for the Southern market, and much attention is given to the canning of fruits and vegetables. Among the minerals found in this county is zircon, found in large deposits in the valley of Green River, and exhumed in large quantities to be used in Germany in connection with gas fixtures. This, perhaps, is the largest deposit of this mineral in the United States.

Hendersonville, the county seat, is credited with a population of 1,216. This town is a noted summer resort for the citizens of South Carolina and other Southern States. It is reached by railroad, the Asheville and Spartanburg line passing through it. Two miles south of Hendersonville is Flat Rock, originally a summer settlement of wealthy South Carolinians, who surrounded themselves with ample ornamental grounds and erected handsome dwellings. It is also a general summer resort, a spacious hotel being always open.

Henderson County has 188,685 acres of land, valued at \$989,996; and 655 town lots, valued at \$256,035.

Of domestic animals there are—horses, 1,056; mules, 521; jacks and jennies, 8; goats, 100; cattle, 7,184; hogs, 9,698; sheep, 5,740.

Product of taxation—for State uses, \$4,639.43; pensions, \$655.50; schools, \$5,093.08; county, \$11,887.

Population—white, 11,211; colored, 1,378; total, 12,589.

HERTFORD.

Hertford County lies on the northern border of the State, and is bounded eastward by the Chowan River. The soils are, for the most part, of the general region of upland piny woods lands, but near the water-courses there are considerable tracts of oak and pine flats and alluvial land. Along the margin of the Chowan and some of the other water-courses are fringes of gum and cypress swamp. Marl in abun-

dance underlies the surface. Besides the culture of cotton and corn, there are the fish, lumber and naval stores industries. Cotton, lumber and other products are shipped by steamer and rail to Norfolk.

Until recently this county has been without railroad facilities, depending for transportation on the Meherrin and Chowan Rivers, which flow through it or along its borders. Now the Norfolk and Carolina Railroad, extending southwardly to Tarboro, and a branch road giving connection with Murfreesboro, have been provided.

Murfreesboro is the most populous town in the county, with a population of 674, and is the seat of a flourishing female college.

Winton, the county seat, has a population of 419.

Hertford County has 207,241 acres of land, valued at \$990,984; and 421 town lots, valued at \$192,309.

Of domestic animals there are—horses, 1,356; mules, 679; jacks and jennies, 2; cattle, 4,154; hogs, 11,975; sheep, 2,404; goats, 377.

Product of taxation—for State uses, \$5,366.25; pensions, \$753.31; schools, \$7,928.74; county, \$4,045.90.

Population—white, 5,906; colored, 7,945; total 13,851.

HYDE.

Hyde County is enveloped by sounds and great bay-like rivers, and its middle portion is occupied by a large lake, Mattamuskeet, twenty miles in length and six miles wide, with two other lakes in its northern portion. Two-thirds of its land-surface is occupied by the great Alligator Swamp. A narrow fringe of from one to two miles width around the central lake is the highest portion of the county, and is from six to ten feet above tide. It was originally covered with a heavy swamp growth of cypress, gum (tupelo), maple, ash, etc. These lands have been cultivated for a century, and still produce fifty bushels of corn to the acre, without manure or rotation. This ridge slopes off in every direction from the lake—eastward into a tract of oak flats which extends to the sound. The south-western portion of the county is within the projecting arms of Pungo River, and other bays from Pamlico Sound, and may also be described as oak flats, with a soil which, in general terms, is a gray silty loam, an admirable wheat soil. The northern portion of this county, throughout its whole extent from east to west, is a low-lying savannah or peaty cypress and juniper swamp, like the Great Dismal, called Alligator Swamp. The productions of this county are chiefly corn, wheat and cotton, to which has been added rice. Lumbering and fishing complete the list of its industries.

The exhaustless fertility of the lands of Hyde, affected neither by heat nor drought, have made them an assured granary, out of which the needs of other places may be always supplied; and a large number of coasting vessels make numerous trips to Charleston, Wilmington, New Bern and other markets. In the damp soils on the borders of Mattamuskeet Lake originated one of the best flavored and possibly the best keeping winter apple known—the Mattamuskeet—perfecting best in its original home, but doing well elsewhere.

The remarkable character of the soil of Hyde County, its fertility

and its unchangeable qualities, led Professor Emmons, a former State Geologist, to the following observations:

"Some tracts have been cultivated over a century, and the crops appear to be equally as good as they were at an early period of their culture, and yet no manure has been employed, and they have been under culture in Indian corn every year, or what would be equivalent thereto. If this crop has been omitted, wheat has been substituted for it—not because they are properly wheat soils, but if they are uncultivated the weeds acquire a size that it is impossible to cover them the next year. The same difficulty occurs, in part, in the culture of corn. The stalks are so numerous and large that it is difficult to bury them so completely that they shall be concealed and preserve at the same time an even, handsome surface. The peculiarities of the soil of Hyde County are comprised in two particulars: First, the large quantity of vegetable matter they contain; second, the extreme fineness of the intermixed earthy matter. The earthy matter is invisible in consequence of its fineness and evenly distributed through the mass. An inspection of it even under a common lens would deceive most persons, and they would be led to infer that it was entirely absent. Unlike other soils, it contains no coarse visible particles of sand, and hence it appears that during the growth of the vegetables, which cover at least one-half of the soil, it was subjected to frequent overflows of muddy water, or else the area over which these peculiar soils prevail was usually a mirey swamp which communicated with streams that brought over with it the finest sediment of some distant region. This sediment is frequently a fine grit, and fine enough for hones, and when the vegetable is burnt off it appears a light drab color. The character of the Hyde County soil has never been understood. The cause of its fertility has never been explained, and many persons who are good judges of lands have over-rated the value of swamp lands in consequence of the close external resemblance they have borne to those of Hyde. Analysis, however, will, in every case, detect the difference in the common swamp lands and those of Hyde. The color is black or dark brown, and the whole mass near the surface looks as if it was composed entirely of vegetable matter. We see no particles of sand or soil in it. On the sides and bottoms of the ditches a light gray or ashy soil is discernable; indeed, it is regarded as ashes, and is so called, and is supposed to have been formed by the combustion of ancient beds of vegetable matter. The cultivated lands of Hyde are not chaffy—that is, when dry, like timber, liable to take fire from a spark originated by a gun-wad. There are, it is true, tracts lying in connection with them of this character, which are quite limited, but their occurrence does not affect this general characteristic."

Hyde County has 240,231 acres of land, valued at \$522,378; and 78 town lots, valued at \$13.405

Of domestic animals there are—horses, 1,328; mules, 186; goats, 100; cattle, 6,624; hogs, 9,753; sheep, 2,067.

Product of taxation—for State uses, \$2,638.35; pensions, \$404.98; schools, \$3,708.49; county, \$3,658.25.

Population—white, 4,962; colored, 3,941; total, 8,903.



HUNTING CAMP, HYDE PARK.

IREDELL.

Iredell is a county of rolling uplands, and lies on the waters of the Catawba on the west, and of the Yadkin on the east, being mainly drained by the latter. It is divided in a north-westerly and south-easterly direction, by the course of the tributary streams, into broad, flattish, elevated zones, the summits of which have generally a gray and yellow loam soil, with mixed oak and pine forests and occasional tracts of red-clay oak-covered soils, while along the streams, which abound in alluvial bottoms, forests of oak, walnut, hickory, etc., predominate. One of these high swells or divides lies along and quite close to the course of the Catawba River, and has an elevation of 900 feet in its southern portion, rising to 1,000 feet and upward at its northern limit. The average elevation of the county is but little below 1,000 feet above sea-level.

The cotton crop has increased tenfold since 1870, and is confined mainly to the southern half, this form of agriculture having only recently passed beyond the middle of the county. The northern section produces tobacco as its chief market crop, but corn and the small grains occupy the larger portion of the tilled surface of the county, and aggregate more than 800,000 bushels.

The tobacco crop is greater than indicated by the census figures, which place the crop of 1889 at 199,758 pounds—less than that of 1879. The largely increased business in Statesville, both in sales and manufactures, indicate an error, which our own State returns do not correct.

Iredell County has good railroad facilities, the Western North Carolina Railroad passing through it, and the Atlantic, Tennessee and Ohio Railroad connecting it with Charlotte on the south, and another branch line of twenty-five miles with Taylorsville on the north. With its varieties of soil and of products, its water-power and conveniences for manufacture, the whole county is undergoing rapid development and improvement.

Statesville, the county seat, on the Western North Carolina Railroad, has a population of 2,318. It has a United States public building, a female college, manufactories of various kinds, and is prosperous.

Iredell County has 362,610 acres of land, valued at \$1,858,014; and 829 town lots, valued at \$600,652.

Of domestic animals there are—horses, 2,795; mules, 2,141; jacks and jennies, 24; goats, 48; cattle, 8,334; hogs, 13,667; sheep, 4,509.

Product of taxation—for State uses, \$10,239.74; pensions, \$1,378.51; schools, \$10,674.27; county, \$11,545.60.

Population—white, 19,516; colored, 5,946; total, 25,462.

JACKSON.

Jackson County extends from South Carolina on the south nearly across the State, being separated by the narrow county of Swain from the State of Tennessee. The general form is one broad valley, lying

between the Balsam Mountains on the east and the Cowee Mountains on the west. But the term valley would convey an erroneous idea, since the space between these two dominant ranges is filled with numerous cross chains, making the mountain character predominant, while the valleys are exceptional.

Little encroachment has yet been made on the massive forests which clothe the hills and mountains. Nowhere in the mountain country is the timber more varied in kind or more majestic in size.

With the exception of the high plateau at the south end of the county, where Cashier's Valley is situated, and where the soil is light and somewhat thin, the soil is of great fertility, remarkable for the high percentage of productive arable lands.

The usual crops and fruits of the mountain section thrive luxuriantly. Tobacco is found to be well adapted to both soil and climate, and its culture is increasing.

This county is very rich in minerals, though there has been little development of quantity or value. Several copper veins of ascertained richness have been opened. Chromic iron is found in large quantities near Webster. Nickel ores, or genthites, are found in the same locality. Other ores of iron are abundant. Mica, asbestos and corundum are also abundant.

In the northern part of the county, along the Tuckasee River and along the waters of Soco Creek, is an Indian reservation inhabited by families of Cherokees, who are also distributed through the adjacent counties of Swain and Graham. The whole number in these counties is nearly fifteen hundred. They have adopted the habits of the white men, and are engaged in agricultural pursuits. They have their schools and churches, and are under the guardianship of their chief, James Blythe, an educated and intelligent native.

The county is now intersected by the Western North Carolina Railroad; and from Sylva, a station on that road, a branch line has been constructed to Webster, the county seat.

Among the mineral substances applied to use is kaolin, found in great abundance near the valleys of Scott's and Savannah Creeks, and prepared for the use of potteries and porcelain works at Sylva and Dillsboro. The manufactured product is very beautiful.

Cattle-raising in the mountain ranges engages the industry of the inhabitants, and large numbers of animals are annually driven to market.

Webster, the county seat, has a population of 200. Sylva and Dillsboro are flourishing villages on the line of railroad.

Jackson County has 317,280 acres of land, valued at \$601,071; and 135 town lots, valued at \$37,055.

Of domestic animals it has—horses, 1,163; mules, 331; jacks and jennies, 10; goats, 22; cattle, 8,113; hogs, 12,399; sheep, 6,106.

Product of taxation—for State uses, \$2,427.03; pensions, \$373.37; schools, \$3,121.29; county, \$3,263.36.

Population—white, 8,630; colored, 528; Indians, 375; total, 9,512.

JOHNSTON.

Johnston County lies on the upper waters of the Neuse River and its larger tributaries, which traverse it in a south-east direction, and consists, for the most part, of level and gently rolling piny uplands, with a few small bodies of more sandy and barren pine lands. It lies on the western margin of the long-leaf pine region, its south-eastern half being characterized in its general features by the same soils and growth as the average of that belt, while along the north-western margin the lands are more hilly, and the piny belts are alternated along the streams and more hilly portions with oak and pine forests and gravelly loam soils. There are tracts of quite sandy soil in the eastern section, while in the middle section are large bodies of pine flats.

Johnston is one of the most prosperous counties, as, besides its large cotton crop, the grain product reaches nearly 500,000 bushels, and its crop of potatoes exceeds 200,000 bushels. Cotton is the principal crop of the county, and prospers in almost all parts of the county, especially on the broad belts of bottom lands lying along the Neuse River, Swift Creek and other streams.

The county is traversed from east to west by the North Carolina Railroad, from north to south by the "Short-cut" line from Wilson to Florence, S. C., and is penetrated by the Midland Railroad, extending from Goldsboro to Smithfield, a distance of twenty-five miles. The navigation of the Neuse River has been opened as far as Smithfield for steamboats, but is not kept regularly open, and the markets are sought through the railroads.

Smithfield is the county seat, and has a population of 550. Clayton has a population of 478, Selma of 527, Boon Hill of 243, and Pine Level of 264. All those last mentioned are on the North Carolina Railroad.

Johnston County has 483,295 acres of land, valued at \$2,234,344; and 810 town lots, valued at \$245,790.

Of domestic animals there are—horses, 1,623; mules, 2,002; jacks and jennies, 8; goats, 3,198; cattle, 10,682; hogs, 37,651; sheep, 7,225.

Product of taxation—for State uses, \$9,861.66; pensions, \$1,458.16; schools, \$13,898.67; county, \$11,676.59.

Population—white, 19,917; colored, 7,322; total, 27,239.

JONES.

The great tract of swamp land which lies between the Neuse River and the Atlantic Ocean, and extends through a considerable portion of the two preceding counties, projects westward into Jones County, where it reaches its highest elevation of forty feet, and is crowned by a chain of small lakes of from one to three or four miles in diameter on the summit, on the border of Jones and Carteret Counties. The northern border of the county is occupied by a portion of the great Dover Pocoson, which projects into it from Craven. In its middle and southern sections lies a great part of the great White Oak Swamp, the central

portion of which is also a pocoson, but it is margined about with fringes of canebrake lands, white-oak flats and cranberry marshes, as well as by considerable tracts of swamp lands covered with oak, cypress, gum, poplar, ash, etc. Trent River flows through the centre, and, with its tributaries, drains almost its entire area. Along this river, on both sides, are considerable bodies of long-leaf pine sandy lands. There are also along the main river, as well as its tributaries, narrow strips of oak flats and occasional gum and cypress swamps.

The soils of this county are of two kinds—the one of a light loamy soil, more or less mixed with sand, with a subsoil of gray clay, easy of cultivation, returning good crops of cotton and grain, and an excellent soil for truck farming. It also produces excellent bright tobacco, though this crop, at present, does not appear to increase. The other is a heavy loam, underlaid with a substratum of stiff red clay, producing abundantly cotton, grains or tobacco. The fertility is largely due to the presence in the soil of decomposed shells or carbonate of lime. This material is also found undecomposed, in solid masses, often outcropping above the soil and providing an easily accessible building material or material for burning into lime.

Trent River runs through the county, uniting with the Neuse at New Bern and providing steamboat navigation from that city up to Trenton.

Trenton is the county seat, and has a population of 207.

Jones County has 212,319 acres of land, valued at \$702,087; and 116 town lots, valued at \$39,407.

Of domestic animals there are 566 horses, 561 mules, 2 jacks and jennies, 587 goats, 3,563 cattle, 8,953 hogs, and 1,493 sheep.

Product of taxation—for State purposes, \$2,513 05; pensions, \$376.11; schools, \$2,736.53; county, \$5,890.93.

Population—white, 3,885; colored, 3,518; total, 7,403.

LENOIR.

Lenoir County lies on the lower course of the Neuse, east of Wayne. The northern half consists of level piny uplands of the same character as those of the counties adjoining it on the north, having narrow tracts of swamp land along its water-courses, while in its western and northern parts there are wide tracts of level semi-swamp lands, which are characterized by a dark fine gray loam of great fertility. The southern half of the county, south of the Neuse, is characterized generally by a more sandy soil, and on the higher divides between the streams by narrow zones of pine barrens. The water-courses in this half of the county are also bordered by cypress and gum swamps, and, to some extent, by oak and pine flats. Shell marl (blue), chalk marl and green sand are all found in this county—one or the other in almost every neighborhood. The face of the country may be described as level, though there are some portions where the land is rolling.

Cotton is the great staple. The soil is well adapted to the cultivation of corn and all other cereals; also Irish and sweet potatoes. All the fruits of the temperate regions can be successfully grown, and the cul-

tivation, if made a specialty, would be attended with profit. There are no lands in the entire State of North Carolina better adapted to the cultivation of bright yellow tobacco than the lands of Lenoir County. Owing to the great prosperity of this county, land is in demand. There is a high order of intelligence among the farming population, and they are well abreast with the recent improvements in farming and are well informed in agricultural chemistry. They take rank with the most successful farmers in the South. Their lands are scientifically cultivated, and their farms are models of neatness.

While cotton is the leading crop, intelligent care is taken for an abundant provision of breadstuff and flesh-producing animals, and no people of the State are better prepared to meet the contingencies of low prices and partial injury to crops than the farmers of Lenoir.

The Atlantic and North Carolina Railroad traverses the county, giving access to all the markets; and this facility has given an impetus to truck farming, for which soil and climate are well adapted, and all the early vegetables cultivated on the shores of navigable waters are sent to market from Lenoir with equal facility and profit. The Neuse is navigable to Kinston and for a few miles above, and is navigated by regular lines of freight steamboats.

Kinston, the capital, is situated on the Neuse River, and also on the Atlantic and North Carolina Railroad; and is also the southern terminus of a branch of the Wilmington and Weldon Railroad, extending from Weldon via Scotland Neck, a distance of 112 miles. Kinston is a considerable cotton market, and forwards annually between 10,000 and 12,000 bales. The population is 1,726 by the census of 1890. LaGrange, by the same census, has a population of 775.

Lenoir County has 244,023 acres of land, valued at \$1,101,884; and 612 town lots, valued at \$378,760.

Of domestic animals there are 995 horses, 1,082 mules, 2 jacks and jennies, 3,152 cattle, 12,385 hogs, 3,324 sheep, and 636 goats.

Product of taxation—for State uses, \$5,997.48; pensions, \$797.94; schools, \$6,431.12; county, \$6,672.45.

Population—white, 8,517; colored, 6,362; total, 14,879.

LINCOLN.

Lincoln County lies south of Catawba County and west of the Catawba River, and its features, agricultural and topographical, are those of that county, and may be described in nearly the same terms. Its territory is drained by the parallel courses of the numerous tributaries of the South Fork of the Catawba, which traverses its middle section, and the average elevation is nearly 1,000 feet above sea-level. In its middle portion is a north and south zone, several miles in breadth, of red-clay soils, with oak and hickory forests. For the rest, its forests are mixed oak and pine, and its soils are gray and yellow gravelly loams. The eastern side of the county is quite hilly near the river.

This county, once one of the largest in the State, has been so reduced by the formation of other counties from its territory as to be one of the

smallest. It, however, retains much of its former consequence, owing to the productiveness of its soil, the variety of its crops, the value of its ores, and its fine water-power and consequent adaptation to the uses of manufactures.

It produces tobacco of good quality and in considerable quantity, and a cotton crop of about 4,000 bales, besides wheat, corn and other grains. It is naturally the home of the grape, and it is here the celebrated Lincoln grape had its origin. It has been long noted for its productive iron mines, which have been worked since ante-Revolutionary days. It has abundant water-power, both from the main stream of the Catawba River and from the South Fork of the same stream, and upon both of them are large cotton factories.

Lincolnton is the county seat, and has a population of 957. It is on the Carolina Central road, which is here intersected by the Chester and Lenoir Narrow Gauge Railroad, thus giving the town and the county ample facilities for travel and transportation.

Lincoln County has 177,859 acres of land, valued at \$1,047,670; and 284 town lots, valued at \$125,532.

Of domestic animals there are—horses, 1,223; mules, 1,442; jacks and jennies, 11; goats, 25; cattle, 4,558; hogs, 7,367; sheep, 2,757.

Product of taxation—for State uses, \$4,977.27; pensions, \$696.43; schools, \$5,054.41; county, \$5,702.59.

Population—white, 10,028; colored, 2,558; total, 12,586.

MCDOWELL.

McDowell County lies on the eastern flank of the Blue Ridge, near its highest parts, which exceed in this region an elevation of 5,500 feet, and its whole territory may be described as mountainous. Its average elevation is more than 1,500 feet, and it is for the most part drained by the headwaters of the Catawba River. The southern and broader end of its triangular territory is traversed east and west by the South Mountains, a long eastward projection or spur from the Blue Ridge. Along the course of the Catawba River and some of its chief tributaries are wide tracts of sandy and alluvial bottoms, which are very productive. The hilly and mountainous tracts have the usual variety of gray and yellowish oak uplands soils of medium fertility and mixed forests of oak, pine, chestnut, etc. Reddish clay loam soils, with a preponderant oak forest, are found in patches here and there in the middle and southeastern sections. A large proportion of the soils of the county are well adapted to the better grades of tobacco, and the agriculture of the county has the great advantage of an abundance of limestone in the northern and middle sections. Gold mining in the South Mountains has long been an important industry, several mica mines having been opened, and some attention is given to lumbering. There is a large amount of valuable timber on the slopes of the Blue Ridge and in the mountain coves, which must become the foundation of important manufactures, and then there is an indefinite amount of water-power. Iron ores of low grade are abundant.

Considerable attention has been given to tobacco—less so than formerly—though the result was satisfactory, the product being an excellent bright yellow. Some cotton is cultivated, but the chief crops are small grains—wheat, corn, etc.

Fine bottom lands are found along the Catawba River, which rises in the mountain sides of this county, and thence flows through the county in a continuity of broad fertile valley. Other fine valleys are those of Turkey Cove and North Cove. Besides the Blue Ridge on the north and west, the South Mountains and their continuation lie on the south side of the county, and continue to be, as they have been for more than half a century, productive fields of gold placer mining.

The Western North Carolina Railroad passes through the county, and the Charleston, Cincinnati and Chicago road is complete as far as Marion, and gives new and independent connections east and south.

Marion, the county seat, has a population of 791. Its situation in relation to two railroads has brought it prominently into notice, and it is steadily improving.

Old Fort, at the foot of the mountains, before the Revolutionary war the seat of a fort planted there to hold the Cherokee Indians on the other side of the mountains, is a summer resort, has some manufactures, and a population of 250.

McDowell County has 250,120 acres of land, valued at \$534,608; and 1,147 town lots, valued at \$76,729.

Of domestic animals there are 750 horses, 800 mules, 5 jacks and jennies, 4,065 cattle, 6,420 hogs, and 2,000 sheep.

Product of taxation—for State uses—\$2,323.19; pensions, \$379.61; schools, \$3,332.22; county, \$9,604.39.

Population—white, 9,114; colored, 1,825; total, 10,939.

MACON.

Macon County extends from the South Carolina and Georgia lines, on the south, northward to the southern boundary of Swain County. It lies between the Cowee range on the east and the Nantahala Mountains on the west, while along the southern border stretches the Blue Ridge, here assuming its boldest, most precipitous and picturesque forms; the precipices of Whitesides, Black Rock, Fodder Stack, Satvola and Scaly breaking down towards the south with perpendicular faces, of a depth of from 1,000 to 1,500 feet. The highest peak in the Cowee range is the Yellow Mountain, 5,133 feet high. The Nantahala Mountains are a majestic range, beginning with Pickens Nose, 4,926 feet high; thence extending northward with a uniform general height of about 5,000 feet, the highest point being the Wayah, near where the State crosses the Gap at a height of 4,138 feet, that mountain being 5,494 feet in height. Between the Tennessee River and its tributary, the Cullasagee, a range extends northward from the Blue Ridge, terminating near the confluence of these streams, the highest point of which is the Fish Hawk, 4,749 feet. Numerous shorter spurs project at right angles from the main chains of the Cowee and the Nantahala, between which

are streams of ten or twelve miles in length flowing through broad and fertile valleys. The chief of these are Cartoogajay, Wayah, Cowee and Ellijay.

The Tennessee River is the principal stream, rising in Georgia, near Rabun Gap, and flowing northward through a fine valley of great fertility, until it unites with the Tuckaseege. The current of this stream is more gentle than any found among the mountains, and the fall is so gradual that it is selected as a railroad route, the grade not exceeding forty-seven feet to the mile through the whole length of Macon County. The whole valley of the Tennessee is in cultivation, the whole being very fertile.

The next largest stream is the Cullasagee, or Sugar Fork of the Tennessee. This stream, in its whole length, has a tumultuous course, rising on the high plateau of the Highlands, 4,000 feet above sea-level, and cutting its way down to the level of the Tennessee through the opposing mountains in a series of rapids, cascades and cataracts, adding greatly to picturesque effect, but, except as water-power, adding nothing of economical value. The Nantahala is a beautiful mountain stream, having its bed in a trough on almost the top of the Nantahala Mountains, the depression between that range and the Valley River or Tusquittah Mountains being very small.

The area of open land, assimilating in character to the features of the piedmont country, is greater than in any other western county. Farms are more numerous and more continuous, and population more dense. The soil is productive.

The chief crops are wheat, corn, rye and oats, and grass grows luxuriantly wherever seeded, on hill-side or in valley. Some tobacco is raised—once quite largely—but it has now ceased to be a market crop.

Minerals are abundant, but no mines are worked except those of corundum and mica. The former, near the Cullasagee, are worked extensively, the product being about thirty tons a month. Mica is mined extensively in several localities.

Franklin is the county seat. It is finely situated. Its population is less than 500, its distance from railroad being hostile to its development.

Highlands is a new village established by northern settlers as a sanitarium, on the crest of the Blue Ridge, on a broad plateau, at an elevation of 3,750 feet above the sea. It is thriving, and has a population of about 500, representing thirty-one States and Territories.

Macon County has 348,354 acres of land, valued at \$615,984; and 381 town lots, valued at \$78,175.

Of domestic animals it has 1,315 horses, 797 mules, 9 jacks and jennies, 42 goats, 8,318 cattle, 13,330 hogs, and 7,199 sheep.

Product of taxation—for State uses, \$2,959.83; pensions, \$449.29 schools, \$3,551.07; county, \$5,431.10.

Population—white, 9,436; colored, 666; total, 10,102.



CULLASAGEE FALLS MACON COUNTY.



PAINT ROCK.

MADISON.

This county lies north of Buncombe, which is its southern boundary. The Smoky Mountains separate it on the north from Tennessee, Yancey County bounds it on the east, and Haywood on the west.

The county is essentially a mountain territory. There is little or none of valley lands, the whole surface being traversed by ranges of mountains, ranging from 2,500 to 4,500 feet above sea-level. None of them rise to the stupendous height they attain in the adjoining counties of Yancey and Haywood, the great Smoky range even being depressed below its average height. But though mountainous, almost the whole soil is of surpassing fertility. In few counties does the timber attain such vast dimensions, and in some favored localities its size might appear fabulous. On the Laurel River walnut eight feet in diameter, poplar ten or twelve, wild cherry three or four, buckeye of the same, black birch of the same size and of proportionate height, are the common growth of the county. And to them may be added other trees too many in variety to enumerate.

From such exuberance of soil much of agricultural prodigality of wealth might be expected. Nor is there disappointment in expectation, though from absence of the means of transportation agricultural effort was limited to the production of little more than the necessities of life until the discovery that these mountainous hills had peculiar adaptation to the production of superior tobacco. For ten years or more Madison County has been foremost in the production of very superior bright yellow tobacco. The impulse given by its culture has had marked effect upon the condition of the county. Land held at nominal prices has increased in value. Mountain sides and tops that seemed destined forever to wear their vesture and crown of forest have been brought into cultivation. Men that ten years ago scarcely knew the sight or name of money have become prosperous and relatively rich, and the county is now one most forward in improvement.

The soil is prolific in other products. All the grains are prolific in yield, and the grasses flourish in remarkable luxuriance, stock-raising being a very considerable source of revenue which might be indefinitely enlarged.

The mineral wealth of the county is known to be great, but undeveloped. Magnetic iron and other ores of the same metal are found in numerous localities. Corundum of good quality is found on Ivy River and tributaries. Barytes is mined to some extent below Marshall. Lime exists in a vein of half a mile in breadth, exhibiting itself in lofty and picturesque cliffs a mile below the Hot Springs.

The French Broad River bisects the county, passing through it, a broad roaring torrent between precipitous hills, encroaching so closely upon the river as to leave little room for human habitation or enterprise. Laurel River and Ivy River both come in on the right bank, large bold streams, each cutting its way through the mountains, pre-

senting characteristics similar to those of the French Broad and equally unavailable as water-power.

The tobacco crop for 1889 by the last census returns is stated at 2,168,232 pounds, a large proportion of which is bright yellow. It is marketed chiefly at Asheville, and to some extent at Lynchburg and Danville.

The Paint Rock branch of the Western North Carolina Railroad, winding through the confined gorge of the French Broad River, now gives ready access to market, and is now one of the great highways of continental travel.

Marshall, the county seat, is situated in a narrow strip of land between overtopping hills and the river, with a breadth of less than a hundred yards and a length of less than half a mile. It has a population of about 200, active and enterprising, and is the centre of a large tobacco business, there being here two tobacco sales warehouses.

Hot Springs, 16 miles below Marshall, is the most noted spot in the county, celebrated for its warm baths, its extensive hotel, and the beauty of its surroundings. Its importance is confined chiefly to its character as a health and pleasure resort.

Madison County has 227,238 acres of land, valued at \$935,957, and 136 town lots, valued at \$60,230.

Of domestic animals there are 1,492 horses, 1,327 mules, 14 jacks and jennies, 10,096 cattle, 10,925 hogs, and 5,303 sheep.

Product of taxation—for State uses, \$4,239.42; pensions, \$718.39; schools, \$6,746.82; county, \$11,987.28.

Population—white, 17,095; colored, 710; total, 17,805.

MARTIN.

Martin County is bordered on the north by the very tortuous course of the Roanoke River, the tributary waters of which, for the most part, drain it northward into that river. The larger part of its territory belongs to the region of level pine uplands, having a gray sandy loam soil. The higher ridge land, near the south bank of the Roanoke River, has a soil lighter and more sandy, and is characterized by a considerable admixture of long-leaf pine and the average proportion of oaks and short-leaf pine, etc. Along the Roanoke and some of its tributaries there are extensive bottoms or alluvial lands, and about the head streams of its tributaries considerable tracts of swamp land.

The agriculture of the county corresponds, in its main features, to that of Edgecombe and the adjacent counties, but its soils are less productive and its agriculture is less advanced, partly because of its large and profitable lumber industry in the great cypress swamps of the Roanoke. Marl is abundant, and is used to a moderate extent. The production of cotton annually reaches from 4,000 to 6,000 bales, and the rich alluvial lands are prolific in corn, rice and other grains.

The increase of railroad facilities, giving access to swamp and forest region, before out of profitable reach, has given great stimulus to the lumber business, besides promoting general enterprise and advancing

property. A railroad extends from Washington, in Beaufort County, to Jamesville, on the Roanoke. Originally designed as a road for the transportation of timber, it has expanded into one of general utility, connected with lines of freight and travel. Another road, connecting at Tarboro with the extensive Coast Line system, reaches Williamston, on the Roanoke, and thence becomes part of a through line of travel and transportation. These roads, together with the navigation of the Roanoke River and some smaller but deep interior streams, provide Martin County with ample means of communication.

Williamston, situated on the Roanoke, has a population of 751, Jamesville of 346, Hamilton of 782, and Robertsville of 228.

Martin County has 282,860 acres of land, valued at \$1,086,228; and 599 town lots, valued at \$257,007.

Product of taxation—for State uses, \$5,806.27; pensions, \$837.70; schools, \$7,972.47; county, \$7,459 96.

Population—white, 7,838; colored, 7,383; total, 15,221.

MECKLENBURG.

Mecklenburg County is located in the south-western portion of North Carolina, north of the 35th parallel of latitude, about 200 miles from the Atlantic coast, and 100 miles east of the Appalachian range of mountains, and is bounded on the south by the State of South Carolina, and on the west by the Catawba River. The county was originally largely settled by Scotch, with Irish, German and English intermingled. The elevation varies between 600 and 900 feet, the average being about 700 feet above the sea. This is one of the largest and most productive, as well as one of the most populous, counties in the State. The production of cotton constitutes the principal feature of the agriculture of the entire county, having increased more than threefold in the last ten years. Before the war the culture of cotton did not reach northward beyond the middle of the county. A considerable portion of the territory of this county belongs to the class of red-clay lands which were originally covered with heavy forests of oak—pine coming in as a constituent of the forests only on the summits of the ridges and divides between the streams, where the soils are gray and yellow sandy loams. The higher portion of the county, which lies along the water-shed between the Yadkin and the Catawba in a north and south direction, belongs, in the main, to the latter class of soils, but has here and there small tracts of red clay. This county shows a large product of cotton, ranking third in this respect; and also produces corn and the small grains on a large scale.

Gold and copper mining are important industries in several sections of the county. The principal minerals are gold, copper, soapstone and barytes. For over fifty years the gold mines have been famous for their yield of rich ores. After descending below water-level twenty to forty feet, the ores of the veins are converted into sulphurets, and no complete process has yet been introduced and established by which the gold, silver, lead and copper can be eliminated. A perfect process for

separating the valuable metals from the earthy substances would prove invaluable and develop many of the richest mines of the continent. A large capital is now invested in these mines, some of which are being successfully worked.

The numerous railways entering the county, and all centering in Charlotte, have stimulated all industries and encouraged all enterprises. Agriculture has advanced with the encouragement of ready markets and promoted by the operations of the stock law. Good roads facilitate the work of the farmer in his resort to the market, and have advanced materially the value of rural property. The railroads radiate from Charlotte in all directions. The first built is the branch of the South Carolina road, now known as the Charlotte, Columbia and Augusta road; then the North Carolina road, of which Charlotte was the western terminus, and which is now a part of the Richmond and Danville system—part of one of the great through lines of travel and traffic; and this line is extended to Atlanta, going from Charlotte through the south-western part of Mecklenburg County, and developing greatly the resources of a country before much secluded. The Carolina Central, beginning at Wilmington, passes through Charlotte, to find its present terminus at Rutherfordton, thus giving Charlotte another east and west line; and the Atlantic, Tennessee and Ohio road, connecting at Statesville with the Western North Carolina Railroad, makes additional valuable connections and develops another part of the county. Charlotte is also directly connected with the new line recently opened from Monroe to Atlanta, and thus is provided with railroad facilities unequalled in North Carolina. The effect, not only upon Charlotte, but the whole county, has been very great; and no city and no county exhibits more solidly attained or more permanently secured prosperity.

Charlotte, the county seat, by the census of 1890, is credited with a population of 11,557. The city is well laid out, has well paved streets, lines of electric street cars, electric lighting, water-works, sewerage, telephone exchange, public parks, and all the conveniences and necessities of healthy corporate existence; has numerous and elegant churches, schools, an opera-house, an auditorium, capacious and elegant hotels, a United States Assay Office, an elegant public building for Federal court-house and post-office. In addition it has a compress which compressed to December, 1891—one year's work—85,568 bales, four cotton factories, fertilizer factory, iron works (2), oil mill, hosiery-works, spoke and handle-works, lumber-works, etc.

Davidson College, the seat of the college of that name, has a population of 481, Matthews of 335, Huntersville of 431.

Mecklenburg County has 324,949 acres of land, valued at \$2,414,083, and 2,205 town lots, valued at \$2,182,948.

Of domestic animals there are 2,613 horses, 3,667 mules, 15 jacks and jennies, 8,755 cattle, 10,694 hogs, 2,448 sheep, and 97 goats.

Product of taxation—for State uses, \$24,051.07; pensions, \$2,951.22; schools, \$20,880.73; county, \$69,617.71.

Population—white, 23,141; colored, 19,532; total, 42,673.



GRANDFATHER MOUNTAIN.

THE PROFILE.

MITCHELL.

Mitchell County lies between the Blue Ridge on the south and east, and the Smoky Mountains on the north, the west having a conventional boundary. The whole county is to a great degree mountainous, there being little valley formation except on the upper waters of the Toe River. The highest mountain is the Roan, which rises to the height of 6,332 feet. The North Toe River is the principal stream flowing out of the State under the name of the Nolichucky and one of the main affluents of the Holston River in Tennessee.

The soil of Mitchell is uniformly fertile, the timber of large size and of great variety. The cereals grow to great perfection. Apples, cherries and grapes are of great excellence, and much of the land proves well adapted to the production of very fine tobacco. The grasses flourish, and cattle are reared for market in considerable numbers.

The mineral products of this county are confined at present to mica and iron; copper and other metals have been found. The famous Cranberry mines are in the north-eastern corner of the county, and now extensively worked. They are connected by railroad with the Norfolk and Southern Railroad at Johnson City, Tennessee.

The mica mines are the most extensive in the United States, and produce a large proportion of the mica put on the market. The most productive mines are those once worked by an aboriginal race.

Tobacco of fine quality is grown to considerable extent, the census returns for 1889 crediting the county with 44,448 pounds. The timber industry is a great and growing one.

In this county is the Roan Mountain, 6,232 feet high, on whose long grass-covered summit is a fine hotel, made easily accessible, and one of the most, if not the most, elevated health and pleasure resorts in the United States.

Bakersville, the county seat, has a population of about 300, and Elk Park of 313.

Mitchell County has 208,815 acres of land, valued at \$592,968, and 157 town lots, valued at \$60,115.

Of domestic animals there are 1,437 horses, 396 mules, 5 jacks and jennies, 4 goats, 6,316 cattle, 5,421 hogs, 3,343 sheep.

Product of taxation—for State uses, \$2,414.38; pensions, \$402.67; schools, \$3,393.33; county, \$7,207.17.

Population—white, 12,252; colored, 555; total, 12,807.

MONTGOMERY.

In its topographical features Montgomery County may be described in nearly the same terms as Chatham. Several low chains of mountains or high ranges of slate hills cross its territory in a direction nearly north and south. The county is drained by the Yadkin River and two of its chief tributaries, the Uwharrie and Little Rivers. Its territory, therefore, is quite broken in surface. Its soils are mostly sandy and

gravelly loams, with occasional tracts of red clays. Along its eastern border, and particularly in its south-eastern corner, there are large bodies of valuable timber, as it here touches the long-leaf pine belt; the lands are of the common character of this border region, and its soils are generally lean. Cotton is quite a subordinate interest in comparison with grains. The water-power of its rivers is very great, the Yadkin having a fall within the county of more than 200 feet and a force per foot of above 350 horse-power. There are many valuable gold mines, both vein and placer.

The gold mines frequently occasion an excitement similar to that which accompanied the discoveries in California. The gold is frequently found in lumps weighing from four to eight pounds. But though found in this way through a series of many years, there has been no continuity of discovery and no permanent prosperity to miners. The alleged wealth of the Saunders mine, discovered a few years ago, led to some large investments and the introduction of much costly machinery.

The growing scarcity of pine timber in the more accessible pine belt has led to the construction, by private enterprise, of a railroad from Aberdeen, on the Raleigh and Augusta Railroad, to West End, in Montgomery County, a distance of 25 miles, where the fresh forests are brought into use and numerous and large mills have been erected.

Troy is the county seat, and, including Troy township, contains 1,389 inhabitants.

Montgomery County contains 314,500 acres of land, valued at \$844,800, and 129 town lots, valued at \$29,997.

Of domestic animals there are 816 horses, 982 mules, 4 jacks and jennies, 170 goats, 7,050 cattle, 9,550 hogs, and 4,865 sheep.

Product of taxation—for State purposes, \$3,442.31; pensions, \$551.26; schools, \$4,194.80; county, \$7,850.68.

Population—white, 8,982; colored, 2,257; total, 11,239.

MOORE.

Moore County lies on the western margin of the long-leaf pine belt. Its middle and southern portions belong largely to the class of lands called pine barrens or "sand hills." The northern part of this triangular territory partakes more of the character of the oak uplands agricultural division, being very hilly and broken, with sandy and gravelly soil on the higher ridges, having a mixed oak and pine growth, and on the slopes of the hills partaking of the character of clay loams.

Near the middle (a little north of east), as well as in the south-western region, and in the eastern one, are considerable bodies of level and rolling upland piny woods. These are the best cotton soils. The tributaries of the Cape Fear, which rise along the south-eastern section of the county, are fringed with gum, cypress and juniper swamps, and on many of the streams, large and small, are patches, and sometimes considerable tracts, of alluvial "bottom" lands. The agriculture of the county is divided between cotton and grain crops; but the lumber and turpentine interests are quite important, and there are yet large turpentine forests untouched.

A broad belt of the "old sea-basin" runs diagonally through the county, having a warm, productive, but not enduring soil, and favorable to cotton and grain. In this belt are found valuable qualities of sandstone, attractive in color, working easily, and very durable. Quarries of this material have been opened, and one near Carthage has attracted so much attention as to have enlisted large capital for its operation.

Gold is found in considerable quantities in the western part of the county, and placer mining has been pursued with considerable success, the Cagle mines at one time attracting to them large numbers of miners and adventurers. Valuable quarries of millstone grit have long been worked and favorably known, and on the waters of Deep River are large deposits of finely grained and richly colored soapstone or talc.

The Cape Fear and Yadkin Valley Railroad passes through the north-eastern part of the county, and the Raleigh and Augusta Air-Line passes from north-east to south-west, following nearly parallel with the south-eastern boundary of the county through its whole length, giving ample means for transportation, and stimulating the growth of frequent villages as well as saw-mills and turpentine distilleries. A branch road of ten miles connects the Raleigh and Augusta Air-Line at Cameron with Carthage, the county seat.

Carthage has a population of 485, Cameron of 236, Jonesboro, on the Cape Fear and Yadkin Valley Railroad, of 541, Manly of 102, Aberdeen of 227, Keyser of 205, and Sanford of 367. All these are new villages along the lines of the railroads.

On the Raleigh and Augusta Air-Line is the settlement known as Southern Pines, established as a health resort for Northern invalids, but developed into a permanent industrial community. In addition to the health and pleasure inducement, which is encouraged by elegant hotels, a large number of individuals have made themselves handsome homes, and given their attention to the cultivation of peaches and grapes, many hundred acres being in orchard and several hundred in vineyard.

Moore County has 243,955 acres of land, valued at \$1,208,362, and 2,280 town lots, valued at \$223,149.

Of domestic animals there are 1,630 horses, 1,457 mules, 4 jacks and jennies, 526 goats, 9,794 cattle, 21,447 hogs, and 9,923 sheep.

Product of taxation—for State uses, \$6,299.93; pensions, \$895.62; schools, \$7,168.67; county, \$9,560.66.

Population—white, 13,985; colored, 6,494: total, 20,479.

NASH.

The general topographical and agricultural features of Nash County correspond quite closely to those of Halifax, to which its situation is similar. It lies south of that county, and also on the borders of the oak uplands, to which the western part of it belongs. It is drained, for the most part, by the Tar River and its numerous tributaries, along which are narrow strips of alluvial soil, with oak forests and occasional cypress swamps. The divides between these streams, through the mid-

dle and eastern portions of the county, belong to the region of level upland piny woods, the growth being a mixture of long-leaf and short-leaf pine, with oak, hickory, dogwood, etc. These soils are well adapted to the culture of cotton, and are of average fertility. The soils, in many places in the western section, are red or yellowish clay loams. This county lies largely within the area of the most productive cotton section of the State. The corn and potato crops are also important. Marl is abundant in the eastern part, but has not been extensively used.

Tar River waters this county, together with several large tributary creeks, and hence it has a large proportion of swamp and heavily timbered land. In the southern and western portions of the county it is broken and the soil red and stiff, with some rock, well adapted to the growth of grain and tobacco. It grows fine cotton also. In other parts the soil is generally gray and the face of the country level.

In the western, north-western and northern portions there is some lack of timber, except in the swamps. All the other portions are well timbered. The long-leaf pine, red and white and Spanish oak, hickory and blackjack are the leading varieties on the upland, and all of these and the water oak, cypress and gum on the lowland.

The improved farms produce from three-fourths to one and one-fourth bales of cotton of 450 pounds, and from thirty to forty bushels of corn and twenty bushels of wheat to the acre. The unimproved, from one-fourth to three-fourths bale of cotton, and from ten to twenty bushels of corn. No wheat is grown on the unimproved land worthy of mention. On the red land the grasses and clover do well. Large yields of peas and potatoes are grown on the gray land. If the swamp lands in this county were reclaimed it would be one of the wealthiest in the State. It is estimated that if this were done, enough corn could be raised in this county alone to supply one-half the entire State. The product of cotton is from 10,000 to 12,000 bales per year.

Within the past few years there has been rapid development in the cultivation of tobacco, the quality being a superior bright yellow. So encouraging is the industry, and so suitable the soil, that tobacco promises largely to supersede cotton. Markets have been established near at hand—that at Rocky Mount having assumed large proportions. By the census of 1890, the crop of 1889 is stated to have been 782,813 pounds, and, though probably falling short of the reality, shows enormous gains over that of 1879, when it was only 7,562 pounds.

The county is well provided with railroad facilities—the Wilmington and Weldon road running along its eastern border, with a branch from Rocky Mount to Tarboro, and thence to Williamston; and the Albemarle and Raleigh Railroad penetrates the county as far as Springhope.

Tar River, at its falls near Rocky Mount, affords exhaustless water-power. It is here the Battle Cotton Factory was erected, about the year 1816—the first cotton-mill built and operated in North Carolina—yet running with greatly added power and productiveness.

Nash County was once famous for its apple orchards and its apple brandy. The orchards have fallen into decay, and the brandy has little more than local reputation.

The gold formation which characterizes the north-eastern corner of Franklin County extends over into the adjacent territory of Nash. Among the mines that have been profitably worked in this county is the Arrington Mine.

Nashville is the county seat, with a population of 401. Castalia has a population of 159; Springhope, of 248; Rocky Mount (the Nash portion) has a population of 489. Near this place is situated the Battle Cotton Factory, and in the town are tobacco sales warehouses. An improvement company has recently made large investments in land within the corporate limits, and proposes to engage in extensive enterprises.

Nash County has 325,758 acres of land, valued at \$1,769,413; and 397 town lots, valued at \$170,400.

Of domestic animals there are 1,263 horses, 1,374 mules, 3 jacks and jennies, 1,319 goats, 6,983 cattle, 18,586 hogs, 4,930 sheep.

Product of taxation—for State uses, \$7,185.83; pensions, \$1,055.77; schools, \$9,587.44; county, \$11,696.21.

Population—white, 12,186; colored, 8,521; total, 20,707.

NEW HANOVER.

New Hanover is one of the smallest counties in the State, and consists of a narrow triangular wedge between the Cape Fear River on the west and the Atlantic coast on the east, with its narrow fringe of sounds, marshes and dunes. The margins of the streams and sounds are bordered in many places by narrow strips of oak and pine flats, with a gray silty soil. The central portion of the county, as well as the dunes along the shore, are sandy and unproductive, but there are tracts of alluvial and swamp-land river bottoms along the Cape Fear which produce large crops of rice. The county contains the largest city in the State—Wilmington. It is also the most important seaport, and has a large foreign as well as inland trade in lumber, naval stores and cotton, both by means of its railways and navigable rivers. Though now one of the smallest, New Hanover has always been one of the most important counties in the State. The existence of a good harbor, with a good depth of water on the bar, and not only up to the head of tide-water, but into which point flowed a navigable river, penetrating far back into the interior, a possession enjoyed alone by the inhabitants along the Cape Fear River; and, after several tentative efforts at town-building, in 1725 the site of Wilmington was permanently chosen. This is not the place to give the history of the town or settlement. It will suffice here to say that Wilmington prospered; and as the trade with the interior, carried on by means of the Cape Fear River as far as Fayetteville, and thence into the back country, not only gained in importance itself, but became an important factor in the development of all the country to which its influence extended. Wilmington, in process of time, became engaged in a large foreign trade, to Europe and to the West Indies, and it was said at one time that a cargo could be made up here for any port in the world. It continues to be an important port,

with increase of trade and with growing recognition of its value as a coaling port and as a harbor of refuge—its position, south of all the dangerous capes, making it peculiarly attractive to storm-tossed seamen. In recognition of these conditions, the General Government has made continued and liberal appropriations for closing up an obstructive inlet, for deepening the water on the bar, and for cleansing the channel from the bar to Wilmington, so that at spring-tides vessels drawing twenty-four feet of water can cross the bar.

The lower waters of the Cape Fear are the only localities in which tidewater rice can be successfully cultivated, because here alone can the growing crop be flooded with the waters of a full fresh-water river in combination with the flow of the tide from the sea. Rice has therefore for more than a century been cultivated here, and its culture constituted the wealth of a body of planters noted for their intelligence, their social culture, their intellectual force and accomplishment, their courage and their public spirit.

With the exception of rice, the agricultural industry of New Hanover County is small. On the coast there are profitable fisheries, chiefly mullet, and the waters abound in oysters.

Wilmington, the county seat, has, by the census of 1890, a population of 20 056. The city is situated on the east side of the Cape Fear, at the junction of the north-west and north-east branches of the Cape Fear River, assuring a deep, safe and commodious harbor, vessels able to cross the bar coming up directly to the wharves, a distance of thirty miles. The harbor is resorted to by vessels of every nation and from all the ports of the world. The exports are chiefly cotton, cotton goods, timber, lumber, naval stores, and numberless miscellaneous goods. Cotton is largely exported to European ports, chiefly in steamers. Naval stores are mostly transported in Norwegian and German vessels of the class of barks. Domestic or coastwise trade is carried on by lines of steamers and large schooners.

There are annual fluctuations in business from various causes. The President of the Chamber of Commerce, for the year 1891, makes the following statement:

I regret to note a falling off in the receipts of the principal articles of commerce at this port. For the year ending March 31. 1892, they have been as follows:

Rosin, 294,520 barrels, against 366,502 barrels last year; spirits turpentine, 68,999 casks, against 67,785 casks last year; tar, 68,798 barrels, against 66,324 barrels last year; crude turpentine, 13,924 barrels, against 18,201 barrels last year: cotton (from September 1, 1891), 153,590 bales, against 182,648 bales last year. The exports of lumber have been 26,115,927 feet, against 38,660,262 feet last year, but as the receipts of timber have been larger, it is probable that an increase in local consumption and inland shipments has fully compensated for this loss.

The falling off in naval stores is principally caused by the gradual natural exhaustion of the pine forests contiguous to this market, but it is a matter of regret that an increase in cotton business has not compensated for that loss, and the present depressed state of the cotton trade, which only a decreased production can cure, warns us that we cannot look to that industry to increase our trade for some years to come.

Wilmington has one large cotton factory, a wood and basket factory, numerous steam saw-mills, rice-mills, oil-mills, planing-mills, etc., etc., and has electric and gas lighting, water-works, electric street railway,

opera-house, a costly Young Men's Christian Association building, numerous costly churches, beautifully arranged and adorned cemeteries, handsome and costly government buildings, and all that is needed for the comfort, health and convenience of a city.

Wilmington is the focal point of the Wilmington and Weldon Railroad, of the Wilmington, Columbia and Augusta Railroad, of the Cape Fear and Yadkin Valley Railroad, of the Carolina Central, of the Wilmington and Onslow Railroad, and of the Sea Coast road, and also of a regular line of steamers to New York.

New Hanover County has 87,123 acres of land, valued at \$447,235, and town lots valued at \$3,373,666.

Of domestic animals there are 701 horses, 201 mules, 487 goats, 2,037 cattle, 3,556 hogs, and 76 sheep.

Product of taxation—for State use, \$20,355.96; pensions, \$1,944.50; schools, \$26,999.53; county, \$34,217.81.

Population—white, 10,089; colored, 13,937; total, 24,026.

NORTHAMPTON.

Northampton County is situated between the Virginia border and the Roanoke River. Its soils belong to the general region of level piny uplands, merging toward the western limit into oak uplands and a more hilly surface, with an elevation of 150 feet above sea-level. Its numerous streams have general fringes of oak flats, alluvions, or gum and cypress swamps, and the Roanoke River has in its extensive "bottoms" some of the best corn lands in the State.

The product of cotton in Northampton is large in view of its relatively high latitude, reaching annually between 10,000 and 15,000 bales. Corn has always been a leading crop, especially on the rich lands of the Roanoke, which, however, are seriously exposed to the disasters of overflow. Only a small quantity of tobacco is now reported as being cultivated—5,879 in 1889 against 20,484 in 1879.

Northampton County is connected by railway by the Petersburg and Weldon Railroad with Petersburg, Va., and by the Seaboard and Roanoke road with Portsmouth, Va., and it has good navigation down the Roanoke from the falls below Weldon. The first railroads built in North Carolina passed through this county.

Jackson, the county seat, has 750 inhabitants, Rich Square 643, and Woodland 247.

Northampton County has 317,453 acres of land, valued at \$1,779,513, and 226 town lots, valued at \$116,175.

Of domestic animals there are 1,913 horses, 1,056 mules, 2 jacks and jennies, 181 goats, 7,538 cattle, 17,655 hogs, and 3,147 sheep.

Product of taxation—for State use, \$7,202.77; pensions, \$1,025.62; schools, \$8,010.71; county, \$8,449.76.

Population—white, 9,224; colored, 12,018; total, 21,242.

ONSLOW.

Onslow County resembles in large degree the adjoining counties of Carteret and Jones. Nearly one-half of the White Oak Swamp lies in its northern section, and from it flow most of the streams by which the county is drained. The best agricultural lands of the county lie along the margin of this swamp. A great part of it is drained southward into New River, which traverses the entire length of the county from north to south. This river, for one-half of its length, is a broad, navigable bay, from one to two miles wide, and is famous for its fine oysters and fish. On both sides of it are large tracts of upland piny woods, with a gray sandy soil, which are admirably adapted to the production of cotton. Nearer the sea-coast and its fringe of sounds the soils are more sandy, and are covered with long-leaf pines as their principal growth, a similar large tract occupying its north-western section. There are numerous narrow fringes of cypress swamps along the various streams. A portion of the south-western side of this county is penetrated by the Holly Shelter pocoson. The productions of this county are similar to those of Jones.

Jones and Onslow were settled early in the eighteenth century by French Huguenots and German Palatinates; their descendants to this day are fine types of both races; and the names of their ancestors are still preserved in their families. There is a large body of land lying in these two counties known as the White Oak Swamp. It covers an area of eighty-six thousand acres. It is one of the heaviest timbered tracts in the Atlantic States. The oaks are of huge dimensions, unknown in northern climes; the pines are of enormous girth, and frequently attain a height of one hundred and fifty feet; the poplars and cypress are also of huge dimensions. The soil is as fertile as the best lands of Hyde County, and they are classed as the most enduring and richest lands in the United States. This body of swamp lands belong to the State.

The coasts of Onslow are lined with the "Banks," from which they are separated by sounds of from a mile to two miles in width, and of depth only navigable for small vessels. Through these banks, generally opposite a stream making out from the mainland, there is a break or inlet, with a shifting bar of from five to six feet deep, and through this is access to the inner waters. Within the bars and up these streams is the great store of fish and oysters now engaging public attention and the care of legislation.

The soil of Onslow is productive in cotton, corn, peas, potatoes, and is especially favorable to the perfection of the ground-pea or nut, which, in the decomposed shelly soils in the vicinity of the coast, claims the chief attention of the farmers and constitutes the most profitable crop.

The Wilmington, Onslow and East Carolina Railroad connects Wilmington and Jacksonville. It is 53 miles long, and may be extended to Newbern.

Jacksonville, the county seat, contains 170 inhabitants and Richlands 192.

Onslow County has 285,186 acres of land, valued at \$824,613, and 100 town lots, valued at \$33,240.

Of domestic animals there are 710 horses, 588 mules, 3 jacks and jennies, 295 goats, 6,406 cattle, 191,718 hogs, 4,061 sheep.

Product of taxation—for State uses, \$3,450.71; pensions, \$521.73; schools, \$4,690.91; county, \$3,963.40.

Population—white, 7,392; colored, 2,911; total, 10,303.

ORANGE.

Orange County, historically, is one of the most interesting counties in the State. It was formed about the year 1752, and its healthfulness and the richness of its soil soon made it populous and prosperous. It took very decided part in the troubles that led to Tryon's suppression of the opposition of the Regulators, and also in the war of the Revolution. It was in this county that Lord Cornwallis prepared himself for the struggle at Guilford Court House; and it was at its county seat (Hillsboro) that the convention to discuss the Constitution submitted to the States for ratification was held; and for generations the county was noted for the prominence of its public men.

This county is at an elevation of about 600 feet above the sea. The climate is remarkably healthy and free from malaria. The winters are very mild and the summers are not oppressive. The county is rolling, and is well drained by natural streams. The products are corn, wheat, oats, cotton, rye, barley, grass, tobacco and potatoes. The soil is especially adapted to the raising of fine-grade tobacco, of wheat, of hay and potatoes. Cattle, horses, hogs, sheep and goats are easily raised and thrive here. Apples, pears, peaches, grapes, plums and figs grow in the greatest abundance and of fine quality. There is a large and growing industry in drying fruits and in shipping them also fresh to the Northern markets. Deposits of gold and iron are very abundant all through the county. The Iron Mountain, near Chapel Hill, contains inexhaustible ores of excellent quality. Soapstone and whetstone quarries of the finest grain exist in large deposits.

The south-eastern section of the county is drained by the tributaries of the Cape Fear River, and has a low, undulating tract of land, with gray and yellow sandy and clay loam soils and mixed oak and pine forests. The larger part of this county is characterized by oak forests and red-clay soils, with an intermixture in the poorer sections and on the slaty hills of short leaf pine. The region described as slate hills is characterized mainly by a gray gravelly loam soil. Cotton is cultivated to considerable extent, the crop reaching about 2,000 bales a year. It has long had pre-eminence, along with that of Anson County, of being the best upland cotton raised in the United States. Tobacco is a large and valuable crop, much of it being "bright yellow." The crop of 1889 is given in the census returns of 1890 at 782,713 pounds.

The University of North Carolina is located at Chapel Hill, in this county.

The North Carolina Railroad passes through the county, and from it, at University Station, a branch line of ten miles extends to Chapel Hill.

The streams—the head-waters of the Neuse, Eno and Little River—are small, but afford good water-power. New Hope is an affluent of Haw River.

Hillsboro, the county seat, has a population of 662. Chapel Hill, the seat of the University, has 1,027.

Orange County has 230,425 acres of land, valued at \$1,040,299; and 358 town lots, valued at \$212,630.

Of domestic animals there are 1,782 horses, 804 mules, 7 jacks and jennies, 128 goats, 4,581 cattle, 7,670 hogs, 4,383 sheep.

Product of taxation—for State use, \$5,240.24; pensions, \$734.44; schools, \$5,533.04; county, \$5,639.62

Population—white, 9,705; colored, 5,243; total, 14,943.

PAMLICO.

This county was formed from the counties of Craven and Beaufort. It is penetrated to the interior by an arm of Pamlico Sound called Bay River, and also by a stream (Broad Creek), both navigable for vessels drawing eight feet of water. It is washed on the south side by the waters of Neuse River, on the east by the Pamlico Sound, and on the north by Pamlico River. By far the larger portion of the county is in forest, there being only about one-tenth of the land under cultivation. The lands are of the same character as those of Craven County. There are immense tracts of unreclaimed swamp that can be easily drained, as the fall is great; often the fall is thirty to forty feet. The farms are generally located in the vicinity of the water courses. There is no part of the entire State that presents greater facilities for farmers than Pamlico County. The land is rich, abundant and cheap, and the facilities for transportation, either coastwise or to Newbern, are good. The crops are cotton, corn, oats, rice and potatoes. The pine forests are comparatively untouched. The forests of oak, cypress, holly and gum are immense, and are as yet scarcely disturbed.

There are three flourishing villages situated on Bay River—Stonewall, Bayboro and Vandemere. Bayboro is the county seat, and has a population of 252.

The county has no railroad, and depends for its transportation altogether on the water. But in this it has munificent advantages, for its situation is nearly insular, and the broad estuary of Bay River nearly bisects it. This body of water is noted for its fine oysters, and all the shores abound in fish.

Pamlico County has 134,682 acres of land, valued at \$324,751; and 150 town lots, valued at \$24,781.

Of domestic animals there are 388 horses, 241 mules, 253 goats, 4,376 cattle, 9,252 hogs, and 1,531 sheep.

Product of taxation—for State use, \$1,633.78; pensions, \$266.16; schools, \$2,990.35; county, \$4,092.93.

Population—white, 4,767; colored, 2,379; total, 7,146.

PASQUOTANK.

Pasquotank is a long, narrow strip of territory parallel to Camden County, and is of similar topographical situation and agricultural features. It is bordered eastward and westward by two bay-like arms of the sound, Pasquotank River and Little River, both of which take their rise in the Great Dismal Swamp. The upper and middle portions, there'ore, belong to the general description of swampy land and semi-swamps. Near the streams there are generally strips of swamp proper, with gum, cypress and juniper forests, but farther from them are semi-swamps and oak and pine flats, with oak, hickory, short-leaf pine, ash, maple, black gum, and holly. These lands are of great fertility. The southern end of the peninsula on the sound is, as usual, sandy, piny woods. Much cotton is produced, and lumbering still constitutes an item of consequence, as also in all these Albemarle counties. Truck farming is also assuming large proportions, and the raising of early potatoes for the Northern market has recently become one of the most profitable industries. All these Albemarle counties have unlimited facilities for transportation through their numerous bays, rivers, and sounds which are connected with Norfolk harbor through the Dismal Swamp and the Currituck canals, and also by railway.

The great water facilities possessed by Pasquotank County, the existence of railroad communication, and also canal navigation through the Dismal Swamp, both to Norfolk, and thence to the Northern cities, together with the favor of soil and climate, have given great impetus to truck farming, which, at many points, has superseded other agricultural interests. The same facilities of transportation give activity to the business of shipping fish on ice, and during the fishing season the animation is unceasing.

Elizabeth City, the county seat, has a population of 3,251. Favorably situated on Pasquotank River, at the head of the navigation of the sounds, also at the southern end of the Dismal Swamp Canal, and being traversed by the railroad from Norfolk to Edenton, it possesses advantages it is prompt to improve. Its commerce is large, and its lumber and fishing is very great, and the trucking business is likewise active.

Pasquotank County has 118,772 acres of land, valued at \$600,946, and 598 town lots, valued at \$403,041.

Of domestic animals there are 1,393 horses, 392 mules, 309 goats, 4,526 cattle, 9,325 hogs, 1,644 sheep.

Product of taxation—for State use, \$4,420.54; pensions, \$556.22; schools, \$5,687.57; county, \$9,594.47.

Population—white, 5,201; colored, 5,547; total, 10,748.

PENDER.

Pender County is bounded in part on the south by the Atlantic Ocean, with its fringe of sounds, marshes, and dunes, and is drained southward by the waters of the Northeast Cape Fear River. Holly

Shelter pocoson occupies a large part of the south-eastern section, and from it flow numerous creeks into the above mentioned river, while others flow directly into the Atlantic. The central portion and larger part of this great pocoson, which contains about 100 square miles, is quite barren, but around its margin, especially toward the river, are considerable tracts of white-oak flats, canebrake, and swamp lands, with their characteristic growths and soils. In the north-eastern section lies the half of another similar pocoson nearly as large, called Angola Bay, and in the centre of the western half of the county is a third but much smaller swamp of the same general character. The western side of the county for the breadth of from six to eight miles belongs to the region of upland piny woods, the principal growth being long-leaf pines, with an undergrowth of oaks, hickory, dogwood, etc., and a sandy soil; but some of it approaches the character of the regular "sand-hills," with pine and oak flats here and there. Along the streams are generally alluvial belts or swamps and oak flats, which are the corn lands of the county. A savannah of several square miles is found in the upper end of the county, which merges northward into a barren pocoson of still greater extent. Marl abounds in all parts of the county, and eocene limestone is found along the principal river above named. These add greatly to its agricultural advantages.

The cotton product is inconsiderable; the remaining products are corn, rice, potatoes, lumber and naval stores.

The presence of marl and of the eocene limestone, especially along the western margin of the Northeast River, is indicated by the vigorous forest growth of hardwood trees, and, when they are removed, by the generous response of the soil to cultivation. The locality known as Rocky Point very early drew attention to it from its exuberant fertility, and for more than a century and a-half has been noted for its exhaustless productiveness. In recent years this section of Pender County has been advantageously applied to truck farming in all its branches, early vegetables of all kinds, small fruits and berries maturing at a period so early as to bring them on the Northern markets in quick succession to the early crops of Georgia and South Carolina.

The Wilmington and Weldon Railroad passes through the county from north to south, and the North-west and North-east branches of the Cape Fear River, and Black River, provide ample avenues for transportation.

Burgaw, the county seat, has a population of 366, and Point Caswell and Lillington, villages, have respectively populations of 127 and 80.

Pender County has 341,289 acres of land, valued at \$835,851; and 265 town lots, valued at \$38,600.

Of domestic animals there are 559 horses, 414 mules, 4 jacks and jennies, 6,623 cattle, 18,393 hogs, 4,360 sheep, and 798 goats.

Product of taxation—for State purposes, \$3,164.83; pensions, \$475.70; schools, \$3,954.42; county, \$3,807.35.

Population—white, 5,967; colored, 6,547; total, 12,514.



"TRUCKING"
IN
EASTERN
NORTH CAROLINA



PERQUIMANS.

Perquimans County is in every respect twin to Pasquotank, and northward it extends into the Great Dismal Swamp. A considerable percentage of the surface of Perquimans is occupied by what is commonly called swamp land, though for the most part it is drainable and cultivatable. These swamp lands, which are better described as semi-swamps and oak and pine flats, are a repetition of those before described, and have a similar soil, which varies from a fine gray loam to a dark mucky soil of high fertility. Along the Perquimans River, which is an arm of Albemarle Sound, lie in a south-easterly direction narrow zones of cypress swamps, beyond which, northward and southward, are narrow tracts of sandy soil, with forests mainly of long-leaf pine. These long-leaf pine tracts, which occupy the divides between the streams, project, in the form of promontories, into the margin of the sound. These promontories, extending between sheets of navigable water, deeply indenting the land, offer uncommon facilities to the farmer, who has transportation for his produce so ready at hand, and the richness of the soil and mildness of the climate assures him of large returns for his labor. The numerous waterways, and the passage of the railroad through such an extent of the county, has greatly promoted the trucking business, the market of New York being at no greater distance than is overcome in a trip of twenty-four hours. The same facilities favor the fishing interests. The shores of all the rivers, bays and creeks abound with shad, herring, rock-bass and other fish.

Hertford, the county seat, has a population of 733.

Perquimans County has 138,847 acres of land, valued at \$687,120; and 265 town lots, valued at \$101,840.

Of domestic animals there are 1,217 horse, 564 mules, 1 jack, 259 goats, 5,254 cattle, 10,494 hogs, and 2,768 sheep.

Product of taxation—for State use, \$3,566.50; pensions, \$517.65; schools, \$5,020.71; county, \$3,798.70.

Population—white, 4,719; colored, 4,574; total, 9,293.

PERSON.

Person County lies outside of the cotton belt, and belongs to the bright tobacco zone. Near the middle of it rise several low mountain ridges of granite and slate, with oak and pine forests. These attain an altitude of about 1,000 feet (the general elevation being from 600 to 700 feet), and have a thin gravelly and sandy soil, while the other sections are alternately of this character and of red-clay soils of greater fertility. To the latter class belong especially the north-western and south-eastern sections. The chief agricultural interest is the production of tobacco of a high grade, in which industry this is one of the leading counties. To this crop the light sandy soils are peculiarly adapted. These light soils produce that high-priced grade known as bright yellow, and in this is surpassed by no other county in the State.

The southern side of the county most abounds in these soils, but in the northern section, among the high rolling lands of Hyco and Country Line Creeks, the product is equally abundant and in no way inferior. The crop for 1889 is given by the census at 2,327,201 pounds. Wheat, corn and other grains thrive.

The mineral riches of the county are confined to copper, mines of which are found in the north-eastern corner of the county and extending over into Granville, and are believed to be of great value. Iron ores of value are found in the vicinity of Mt. Tirzah, and have been turned to profitable account, especially during the war, when they supplied castings for household and farm use.

The elevation of Person County assures it as the fountain-head of the tributaries to the Neuse and Tar Rivers, and to streams flowing northward into the Dan.

The Durham and Lynchburg Railroad passes through the county, providing needed facilities for transportation.

Roxboro, the county seat, had, by the census of 1890, a population of 421; but there has been rapid increase since its acquirement of railroad communication. It is now the seat of important tobacco factories, sales warehouses and other evidences of newly created business.

Person County has 203,423 acres of land, valued at \$1,046,218; and 81 town lots, valued at \$73,150.

Of domestic animals there are 1,778 horses, 890 mules, 10 jacks and jennies, 47 goats, 4,183 cattle, 7,547 hogs, 3,302 sheep.

Product of taxation—for State use, \$4,799.99; pensions, \$711.38; schools, \$5,834.46; county, \$5,659.30.

Population—white, 8,251; colored, 6,900; total, 15,151.

PITT.

This county lies west of the county of Beaufort, and is penetrated its whole length by Tar River, which is navigable at all seasons for light-draft steamers. The soil is extremely varied, probably more so than in any other county of the Pamlico section. In the eastern part on the south side of the Tar River, adjoining Beaufort County, the soil may be characterized as a light sandy loam, with a greyish clay subsoil. In the upper part, or rather the north-western part, the soil is generally underlaid with a stiff red clay; immediately on the left or the north side of Tar River, the lands lying along the river the entire length of the county east and west, are of a more distinctive character, of a light sandy loam. Farther north, toward the Martin County line, they assume a different character, are what may be classed as a heavy loam. There are also bodies of swamp lands cleared that partake of the fertility characteristic of that class of lands in Eastern Carolina. The soil appears to the observer to run in streaks, and the lines of demarcation are distinctly marked. Their general character is that of fertility, and easy of tillage. They yield excellent crops of cotton, corn, oats and rye. In the last century tobacco was one of the great staples on Tar River. Within a brief period the cultivation of tobacco has been

resumed, and promises to assume large proportions, the quality being very desirable, and the conditions of soil and climate very favorable. Cotton is at present the most important crop, the annual yield being from 12,000 to 16,000 bales. The land is productive in every other subject of culture—corn, wheat, rice, peas, potatoes—and the whole soil being underlaid with marl, perpetual fertility is assured. Fruits thrive luxuriantly, and nowhere is the grape more prolific or more certain in its yield. The finest varieties of native grapes have originated here, among them that new choice variety of the *Vitis Vulpina*, the James grape, a black variety of the scuppernong, but larger and better flavored, and bearing transportation better.

Pitt County is supplied with water transportation by Tar River, which passes through its centre, and by Contentnea Creek, which washes its southern border, the navigation of which has been opened by the General Government.

A railroad from Weldon via Scotland Neck, a branch of the Wilmington and Weldon Railroad, passes through Greenville, with its present terminus at Kinston.

Greenville, the county seat, is situated on Tar River, and has the benefit of steamboat navigation, and has a population of 1,937.

Pitt County has 369,598 acres of land, valued at \$1,795,162, and 534 town lots, valued at \$270,642.

Of domestic animals there are 2,181 horses, 1,625 mules, 3 jacks and jennies, 1,172 goats, 8,371 cattle, 24,778 hogs, and 1,722 sheep.

Product of taxation—for State use, \$8,917.78; pensions, \$1,288.84; schools, \$10,882.47; county, \$7,224.21.

Population—white, 13,192; colored, 12,327; total, 25,519.

POLK.

Polk is the southernmost of the Piedmont counties, lying upon the border of South Carolina, and of the cotton belt, which barely enters its south-eastern corner. Three-fourths of the territory of the county is very mountainous, as it is bounded westward by the Blue Ridge, and its western and northern sections are penetrated by heavy and long spurs, thrown out from that range, of equal height or greater. It is crossed from west to east and nearly its entire territory is drained by the waters of Green River, one of the principal tributaries of the Broad. Along this river valley, as well as on some of the tributaries, are wide stretches of bottom lands of clay and sandy loams. The middle part of the county is a somewhat broken plateau of 1,000 feet elevation, and has a gravelly and slaty soil of a light color and loose texture and low fertility, and inferior forests of pine, oak, and chestnut. The south-eastern section is of the same character. A large part of the uplands and of the mountain slopes in the west and north has forests largely of oak and a yellowish or gray loamy soil of good quality. In the higher parts, except where the soil is of the better grades, chestnut and chestnut oak are abundant. The principal agricultural pursuit is the production of grain crops. There are several gold mines in the middle and southern sections.

The cotton crop of the county does not exceed 500 bales yearly. Grains and fruits are the chief objects of industrial pursuit. The most famous of the thermal belts lies in this county, and is largely engaging the attention of orchardists and vignerons. The climate is regarded as favorable in pulmonary weakness, and health resorts have been established at several points, notably at Tryon City and Saluda.

The county is traversed by the Asheville and Spartanburg Railroad. Columbus is the county seat.

Polk County has 140,470 acres of land, valued at \$506,332, and 208 town lots, valued at \$54,400.

Of domestic animals there are 423 horses, 440 mules, 5 jacks and jennies, 31 goats, 3,221 cattle, 5,921 hogs, and 1,680 sheep.

Product of taxation—for State use, \$2,151.15; pensions, \$312.38; schools, \$2,215.13; county, \$2,679.52.

Population—white, 4,807; colored, 1,095; total, 5,902.

RANDOLPH.

This county, in general profile, is an inclined plane, dipping southward, and making a descent of more than 400 feet from an altitude of about 800 feet on the north to an altitude of 300 or 400 feet on the south, a rate of fourteen or fifteen feet per mile. The surface is diversified by subordinate plains and extensive hilly districts, and marked in the west and south-west by enormous hills that "approach the measure and dignity of mountains." The most important of the physical features are the two river basins that extend from north to south across the county in nearly parallel depressions. The Deep River basin comprises most of the northern and all of the eastern portion of the county—Deep River entering the county near the middle of the northern boundary and running a tortuous course to the south-east corner of the county. The Uwharrie basin occupies the western side, the Uwharrie River running parallel to the western boundary, and only a few miles from it. Both of the above-named rivers have numerous and large tributaries, fed by bold and constant springs, which afford an ample water-supply during the longest droughts. Between these two river basins is the divide, or water-shed, extending from the north-west corner to the centre of the county, thence southward into Moore and Montgomery.

The western and southern sections of the county are characterized by the occurrence of sharp ridges and hills of slate, with light-gray, sandy, gravelly soil; but the upper portion is much less broken, and consists of broad, flattish swells, which constitute the divides between the upper waters of the Haw, Deep and Uwharrie rivers, the latter being one of the tributaries of the Yadkin. The soils of this portion of the county are, for the most part, gray, gravelly loams, alternated here and there with red-clay lands. Cotton is produced in only a small part of the southern half of the county, the production of small grains constituting its principal agricultural feature.

Agriculture is the leading industry in the county. The bottom lands along the water-courses, and the adjacent coves and hills, are naturally very productive, ranking among the best farming lands on the Atlantic slope, while the uplands possess a fair degree of fertility, and return generous results under improved methods of cultivation.

This great variety of soil—the alluvial bottoms, the clayey slopes, the rocky hills, and the sandy plains—gives rise to great variety in the productions of the county. It may be safely said that Randolph can produce successfully and profitably everything that can be produced in the State. It can produce the rice, peanut, cotton and sweet potato of the east and the grains, grasses, fruits and fine tobacco of the west.

The range of hills, known as the Uwharrie Mountains, in the southwestern part of the county, constitute a part of the same formation so prolific in the adjoining county of Montgomery in gold; and this metal has been produced in several mines of note in Randolph, and has long been an object of unsystematic search.

The county is traversed by Deep River, and as that stream cuts through the high hills which become, as they roll away to the south, the Uwharrie Mountains, provide great water-power, applied to nine cotton factories, which have been prosperously at work for many years. These factories are now made accessible both by railroad from High Point, on the North Carolina road, and from a point on the Cape Fear and Yadkin Valley road.

Trinity College, in the north-west corner of the county, was founded in 1842 by Rev. B. Craven, D.D. It is now in process of removal to Durham.

The county is touched on the north-west corner by the North Carolina Railroad, and on the north-east corner by the Cape Fear and Yadkin Valley road, and is penetrated by the branches of those roads already referred to. The first-named branch extends to Asheboro, the county seat, which has a population of 510. Randleman has a population of 1,754; Worthville, of 328; Archdale, of 224; Trinity, of 380; and Liberty, of 366. Franklinsville and Ramseur, considerable villages, have their populations included in the returns of their townships.

Randolph County has 453,469 acres of land, valued at \$2,058,134; and 535 town lots, valued at \$164,194.

Of domestic animals there are 3,115 horses, 2,164 mules, 17 jacks and jennies, 200 goats, 12,020 cattle, 22,121 hogs, and 16,537 sheep.

Product of taxation—for State use, \$9,266.60; pensions, \$1,370.18; schools, \$11,863.24; county, \$921.73.

Population—white, 21,848; colored, 3,347; total, 25,195.

RICHMOND.

Richmond County also lies on the border of the long-leaf pine belt, its eastern and southern portions (forming not less than three-fourths of its territory) belonging to the latter, while its western and northern parts, lying along and near the Great Pee Dee River, belong more properly, in their agricultural features, to the zone of oak and pine

sandy hills, being quite hilly and in some places rugged. The slopes of the hills on the river front and its tributaries are quite steep and broken, and have a clay loam soil, which is covered by oak and short-leaf pine forests. In the north-western corner, on the Pee Dee and its tributaries, are wide tracts of level gray loam soils, originally covered with heavy oak forests. Through the eastern portion of the county, in a north and south direction, lies a considerable tract of pine barrens, which is very sandy and unproductive. The streams which drain the south-eastern section of the county (one-third of its territory) flow into Lumber River, and are margined through their whole course by alluvial tracts and cypress swamps, the divides between these parallel and south-flowing streams being occupied by level upland piny-woods tracts having a gray sandy loam soil of fair productiveness. Cotton is the chief single interest, but the product of grain is large, and the turpentine and lumber interests are still important, though there has been rapid diminution, almost extirpation, of the pine forests along the lines of the railroads, where saw-mills were erected at every convenient point.

No county presents more striking contrasts in its soils, timbers and productions than does Richmond County. Its eastern and south-eastern sections are interlaced with swamps, but readily drained, and productive in cotton and corn. The centre and part of the south is pine barren, with no invitation to agricultural work, while the northern and western sections are hilly, with a red or rocky gray soil. These last, especially such as lie along the Pee Dee, are the most productive cotton lands, and in the production of this staple the county has long held high rank, the product being from 12,000 to 15,000 bales annually. The streams which originate in the pine lands and tend towards the Pee Dee River, at Rockingham encounter a sudden and violent change of geological formation—encounter ledges of rock, precipitate themselves below in lofty cascades, and give that commanding water-power which has concentrated at Rockingham five large cotton factories.

Rockingham, the county seat, is situated immediately on the line of division between the sandy and the red-clay lands. It is important as the seat of the factories above referred to. It has a population of 3,374, including Rockingham township and Great Falls village. Laurinburg, on the Carolina Central Railroad, has a population of 1,357.

The Carolina Central road, connecting Wilmington and Charlotte, passes through the county; the Raleigh and Augusta Air-Line road has its terminus at Hamlet, and from the same point the Palmetto road extends to Cheraw, S. C., and also from Hamlet a railroad extends to Gibson, with ultimate terminus at Bennettsville, S. C.

Richmond County has 446,188 acres of land, valued at \$1,206,761; and 478 town lots, valued at \$220,551.

Of domestic animals it has 1,155 horses, 1,996 mules, 3 jacks and jennies, 592 goats, 4,699 cattle, 10,988 hogs, and 1,493 sheep.

Product of taxation—for State use, \$7,270.29; pensions, \$1,051.44; schools, \$9,021.16; county, \$12,710.24.

Population—white, 10,989; colored, 12,559; total, 23,948.

ROBESON.

The soils of Robeson County are mainly those of the ordinary level piny woods, but there are belts of gum and cypress swamp along nearly all of its water-courses, those on the two main streams being quite large. The county is drained by the upper waters of Lumber River, which enters the Atlantic through the State of South Carolina at Georgetown. On the higher divides between the streams the soil is sometimes quite sandy, in some places reaching the character of pine barrens. The lands are chiefly devoted to the culture of cotton and corn, but the value of the potato and rice crops is quite considerable. Turpentine and lumber are also large interests. Marl is found abundantly in the lower half of the county.

Robeson is now the largest county in the State. From its extreme northern limit, where it meets the counties of Cumberland and Richmond, to its southern boundary, near Fair Bluff, in Columbus County, it is nearly seventy miles long, while its mean breadth is from twenty-five to thirty miles. Much of the county is covered with swamps, the numerous streams being all margined with or hid away in a dense growth of cypress, gum and other woods, but accessible to drainage, and, when drained, producing good crops of cotton, corn and rice. But the principal object of drainage is to obtain access to the timber for making shingles, staves, etc., obtained from cypress and juniper. The black gum abounds in these swamps. Of this wood it is said: "This timber has never been developed. It cannot be split—not even by lightning. In its green state it is heavy and soft: when seasoned it is the strongest and lightest wood we know of, equaling hickory in strength and surpassing it in lightness. It is specially adapted to the manufacture of tool-handles, wagon-tongues, coupling-poles, etc. It is suitable for making paper pulp."

Immense deposits of marl are found underlying the great swamps, a suggestive cause of their fertility when drained. These swamps discharge great quantities water into the streams that empty into Winyah Bay, South Carolina, and have been the channels through which vast quantities of timber and other products of the State have been taken beyond its borders. The construction of railroads has diminished that current of trade. The most extensively pursued avocation is that connected with the products of the forest—timber, lumber, shingles, staves, turpentine and rosin.

Cotton is produced to the extent of about 10,000 bales annually. The crops of corn and some other of the grains are large, and great quantities of peas and sweet potatoes are made. About a million and a half pounds of rice are made on the beds of drained swamps or along marshy borders of streams. The country is suitable to most of the fruits, and especially the native varieties of the grape. The Flowers grape, a sport of the *V. Vinifera*, and very much prized for its wine-making qualities, originated here.

The upper part of the county received a large share of that Scotch immigration which followed the defeat at Culloden in 1746. The middle and southern portions of the county contain large numbers of mixed breed, in which Indian blood predominates. It is asserted that they are the descendants of the lost colony of Capt. John White, which, despairing of help from its founder, united its fortunes with the Croatan Indians, and eventually ended its wanderings in Robeson County. The State of North Carolina provides distinct schools for these people under the name of Croatans.

The Carolina Central Railroad passes through the county, and also the Bennettsville (S. C.) branch of the Cape Fear and Yadkin Valley, and the Short-cut stem of the Wilmington and Weldon road, connecting Wilson, N. C., and Florence, S. C.

Lumberton, the county seat, on Lumber River, has a population, by the census of 1890, of 584, and Maxton of 694.

Robeson County has 662,411 acres of land, valued at \$2,119,177; and 442 town lots, valued at \$248,076.

Of domestic animals there are—horses, 1,824; mules, 2,549; jacks, 1; goats, 1,595; cattle, 9,704; hogs, 38,089; sheep, 6,678.

Product of taxation—for State use, \$9,901.42; pensions, \$1,428.36; schools, \$11,864.32; county, \$11,955.27.

Population—white, 16,629; colored, including Croatans, 14,854; total, 31,483.

ROCKINGHAM.

Rockingham is a border county, and belongs to the famous bright tobacco belt. It is traversed in a northeasterly course by the waters of the Dan River, and its southern section is drained by the upper tributaries of the Cape Fear (Haw) River. The north-western corner of this county, constituting about one-third of its territory, near the Virginia line and north of the Dan River, consists for the most part of elevated flattish ridges and swells having gray, yellow, gravelly loam soils, while the southern and eastern two-thirds of the county consist of alternating belts of these loams and of red clays. Besides tobacco, in which this county ranks second, large crops of grain are produced. Dan River, with its tributaries, furnishes abundant water-power, and the former stream is navigable in a small way for flatboats. A bed of semi-bituminous coal, three feet in thickness, and of good quality, outcrops in the eastern section, but it has been but little mined.

This is one of the largest of the tobacco producing counties—the larger portion of it, even on the heavier bottoms of the Dan and tributaries, being largely devoted to that purpose. The crop of 1889 is placed in the census tables at 4,189,415 pounds. But the lands are also suitable to wheat and other grains, of which large crops are made.

The Dan River runs through the north-western corner of the county, with a gentle current through a broad, very fertile valley. This valley is part of an old sea-basin, and is believed to contain valuable stores of coal. Efforts are now being made to test its value. On the north side of the Dan, Mayo River breaks into the valley over its rim of sand-

stone and provides valuable water-power. At Leaksville the water-power has long been used in application to a large cotton factory.

The Roanoke and Southern, now the property of the Norfolk and Western Railroad Company, connecting Roanoke, Va., and Winston, N. C., passes through Rockingham County. The Richmond and Danville road, passing through the eastern part of the county, is part of the main stem of one of the leading lines through the South.

Wentworth is the county seat.

Reidsville, on the Richmond and Danville Railroad, is an important tobacco manufacturing town with a population of 2,969. It contains several sales warehouses and numerous factories of plug tobacco, and its brands are well and widely known. Leaksville has a population of 726, and Leaksville Cotton Mill village of 315. Madison has 450.

Rockingham County has 339,357 acres of land, valued at \$1,555,412, and 1,163 town lots, valued at \$765,550.

Of domestic animals there are 1,959 horses, 1,267 mules, 4 jacks and jennies, 17 goats, 5,571 cattle, 7,143 hogs, and 1,742 sheep.

Product of taxation—for State use, \$9,540.97; pensions, \$1,291.90; schools, \$11,369.20; county, \$10,784.80.

Population—white, 15,197; colored, 10,166; total, 25,363.

ROWAN.

Rowan County lies on the west bank of the Yadkin River and south of its principal tributary, the South Yadkin, and resembles very closely in its agricultural and topographical features the county of Davidson. Its entire surface is drained by the tributaries of the Yadkin, which traverse its territory in a north-easterly course. Its middle and northern sections, which lie for the most part above the level of 800 feet, rising at one point above 1,000 feet, are characterized by an abundance of red clay soils and heavy oak forests, interspersed with hickory, walnut, etc., only the higher parts of the water-sheds between the streams showing any growth of pine (short-leaf), and having gray and yellow sandy loam soils. The south-eastern corner of the county, amounting to one-third of its territory, is quite broken, and is traversed by low ranges of mountains or high hills, which rise in places to a level of 1,000 feet and more above the sea. These consist geologically, for the most part, of ledges of granite. The hills of this region have a light gray and yellow sandy loam soil.

The culture of cotton, while greatly increased in the past decade, still occupies a secondary place in the agriculture of the county, most of its territory being better adapted to the growth of corn and small grains, of which the total is the largest in the State. The upper portion produces also a considerable quantity of tobacco. There are many gold mines in this county, mostly in the southern part, and several copper veins.

This is perhaps the finest grain-growing county in the State; more oats in 1880 and, with one exception, more corn and wheat having been raised here than in any other county. More hay beyond any com-

parison is shipped annually from this point—1,400,000 pounds having been shipped in 1881. From 8,000 to 10,000 bales of cotton are produced annually, and tobacco in certain portions of the county is raised with great profit and in abundance. There are twenty-five flouring-mills in the county, all run by water.

The gold-mining operations in Rowan are on a larger and more expensive scale than elsewhere in the State. The seat of the chief mining industry is the "Gold Hill" and its associated mines, where the veins have been followed to the depth of 1,500 feet. This mine and others associated with it will be spoken of in a separate chapter.

The Dunn Mountain Granite Quarry, four miles south-east of Salisbury, is one of the most valuable in the country, the stone being in exhaustless mass, of fine homogeneous grain, and of color almost white. It was used in the construction of the Government building at Raleigh.

The North Carolina branch of the Richmond and Danville road runs through Rowan, and at Salisbury the Western North Carolina Railroad, making connection with Paint Rock and Murphy, and with all the systems of the great West, begins. A railroad has been recently opened south from Salisbury to Norwood, in Stanly County.

Salisbury, the county seat, has a population of 4,418. It is admirably situated for trade and manufactures, having the amplest railroad facilities, and surrounded by a remarkably productive country. It has two large tobacco factories and two large cotton mills and other industrial establishments.

The county contains numerous small but prosperous villages.

Rowan County contains 317,010 acres of land, valued at \$1,843,681, and 990 town lots, valued at \$793,540.

Of domestic animals there are 3,325 horses, 1,517 mules, 16 jacks and jennies, 80 goats, 7,181 cattle, 9,838 hogs, 3,674 sheep.

Product of taxation—for State use, \$11,233.19; pensions, \$1,512.91; schools, \$14,877.15; county, \$6,664.37.

Population—white, 17,142; colored, 6,981; total, 24,123.

RUTHERFORD.

The topographical features of Rutherford County may be described in the same terms as those of Cleveland, which bounds it on the east. Like that, it is traversed from its northern limit, in the South Mountains, by the parallel southerly courses of several large tributaries of the Broad River. Its northern half is, in many places, quite rugged and mountainous (being properly a part of the Piedmont Division), and its north-western corner rests on some of the summits of the Blue Ridge, at an elevation of nearly 4,000 feet. Its soils and its agriculture correspond in all their features to those of Cleveland County, and its cotton product has increased seventeen-fold since 1870. Gold mining is also an industry of some importance, especially in the northern section, where placers are abundant and extensive on the flanks of the South Mountains and in the beds of the streams at their base.

From the southern slope of the South Mountains, and from the eastern slope of the Blue Ridge, several large streams have their exit, and pass through this county to unite in forming the main stream of Broad River, which passes into South Carolina. The principal of these are Main Broad, which is on the western side of the county, and then turning to the east and passing along the southern side; the Second Broad, which runs through the centre of the county from north to south; and the First Broad, which passes through the north-east corner; and all of these are swelled by numerous affluents. All of these, when beyond the influence of the mountains, are margined with broad belts of bottom lands of great fertility, productive as grain and grass farms, and, to a considerable extent, as cotton farms—the yield of the county being from 2,000 to 3,000 bales annually; and Rutherford County is practically the western limit of cotton culture in North Carolina. The whole county is favorable to fruit—apples, peaches, cherries, melons and grapes—and also to potatoes.

The mineral wealth of the county is very great. Among the South Mountains placer-mining has been pursued for many years. These deposits are found about the head-waters of First and Second Broad Rivers and Muddy and Silver Creeks, and have been worked in a rude way since 1830, producing several millions of dollars—the most productive locality yet discovered in the Atlantic States.

Rutherford County is penetrated by the Carolina Central Railroad, its present western terminus being at Rutherfordton, a distance of 286 miles from Wilmington. The Charleston, Cincinnati and Chicago Railroad enters the county from Cleveland, passes through Rutherfordton, and has its present terminus at Marion, thus giving the county all needed facilities for transportation.

Rutherfordton is the county seat, and, including the township, has a population of 1,287. Forest City has a population of 419.

Rutherford County has 320,141 acres of land, valued at \$1,255,294; and 296 town lots, valued at \$121,238.

Of domestic animals there are 1,199 horses, 1,658 mules, 13 jacks and jennies, 67 goats, 7,350 cattle, 10,301 hogs, and 4,273 sheep.

Product of taxation—for State use, \$5,272.52; pensions, \$816.07; schools, \$6,569.05; county, \$17,445.09.

Population—white, 15,073; colored, 3,697; total, 18,770.

SAMPSON.

Sampson County lies in the middle of the long-leaf pine belt, and much the larger part of its territory represents the average character of the soils and forests of that belt. It is drained by South River, one of the principal tributaries of the Cape Fear, whose streams divide its territory into north- and south-lying belts or zones—flattish swells, the higher portions of which are characterized by sandy soils, and forests predominantly of long-leaf pine. In places near the southern and western margins, and again near the northern end, there are tracts which are quite sandy, and approach the character of pine barrens.

There are also extensive pine flats, especially on the waters of Six Runs, with here and there considerable bodies of pine and oak flats.

The corn crop of the county is much more important than that of cotton, and the crops of potatoes and rice are both unusually large. There are also large bodies of virgin-pine timber, still valuable both for turpentine and for lumber. Marl is abundant, and is used with the best results in some sections, chiefly the northern. The cotton crop is a considerable one, reaching from 6,000 to 8,000 bales annually. Fine tobacco has been cultivated to an extent, and with a success to justify larger enterprise. Corn and peas constitute an important crop, and sustain the ability of the farmers to make that large quantity of bacon for which the county has long been noted. The lightness, and at the same time the fertility of the soil, enable the farmers to make large quantities of sweet potatoes, and the large bodies of flat marsh land are favorable to the culture of upland rice. Sampson County is noted for the immense quantities of the whortleberry (or huckleberry) which cover the country. These berries are remarkably fine, and have become invested with such value as a subject of trade as to have become the subject of legal protection. The fruit, fresh and dried, is in great demand in the markets of the Northern cities.

Sampson County has water communication with Wilmington by way of Black River, navigable for some distance into the county. The Wilmington and Weldon Railroad traverses it, and a branch of that road extends to Clinton.

Clinton, the county seat, has a population of 839.

Sampson County has 484,195 acres of land, valued at \$1,179,429; and 1,093 town lots, valued at \$115,144.

Of domestic animals there are 1,701 horses, 1,351 mules, 3 jacks and jennies, 4,187 goats, 10,984 cattle, 36,763 hogs, and 7,416 sheep.

Product of taxation—for State use, \$5,572.01; pensions, \$918.70; schools, \$8,773.14; county, \$7,163.78.

Population—white, 15,960; colored, 9,136; total, 25,096.

STANLY.

Stanly County lies on the west side of the Yadkin River, and is bounded on the south by the Rocky River, one of its largest tributaries. Its soils are derived from the clay and chlorite slates of the great central slate belt of the State, and are gray and gravelly loams or red clays, according as the underlying rock is of the former or of the latter description. The forests are of oak and short-leaf pine. Its surface is quite broken near the rivers. The south-western corner of the county is characterized by broad and comparatively level tracts of gravelly land, covered with extensive short-leaf pine forests, with a subordinate growth of oaks.

The products of the county are cotton, of which about 2,500 bales are annually raised, and of a superior quality, and wheat, raised on the same slaty lands which give character to the cotton. The wheat averages in the crop higher than any produced in the United States,

reaching from sixty-five to seventy pounds per bushel, and at the Vienna Exposition taking the prize for weight and excellence against the competition of the whole world.

These slate lands are a depressed continuation of the Uwharrie Mountains, and are rich in gold. Operations in search of that metal have been continued for many years, and now engage considerable capital in the business of vein mining.

The Yadkin—becoming the Pee Dee after junction with the Uwharrie—marks the eastern boundary of the county, and the Rocky River passes through the middle, both valuable for water-power, so far unapplied except to local mills. The Narrows of the Yadkin, the most remarkable water-power in the Atlantic States, are in this county.

A railroad has recently been opened from Salisbury to Norwood, a distance of forty miles. This is the only railroad in the county.

Albemarle, the county seat, has a population of 248, Norwood of 159, Bilesville of 317, Palmersville of 317.

Stanly County has 240,420 acres of land, valued at \$917,881, and 244 town lots, valued at \$69,486.

Of domestic animals there are 1,411 horses, 1,221 mules, 13 jacks and jennies, 108 goats, 5,701 cattle, 8,320 hogs, 5,936 sheep.

Product of taxation—for State use, \$3,814.98; pensions, \$589.07; schools, \$4,272.53; county, \$4,527.15.

Population—white, 10,629; colored, 1,507; total, 12,136.

STOKES.

Stokes is another border county, and belongs also to the bright tobacco belt. It is drained by the upper tributaries of the Dan, and belongs to the Piedmont Division of the State. Its surface is for the most part quite rugged and broken, containing the terminal spurs and ridges of the Brushy Mountains, which here attain an elevation of more than 2,500 feet above the sea. The general elevation is above 1,000 feet. The forests of this county and of the Piedmont Region generally contain an added element, the chestnut, on elevated ridges and mountain slopes, and the proportion increases with the elevation. A new species of oak also makes its appearance, the chestnut oak, which occupies the crests and upper slopes of the poorer stony and gravelly ridges of the whole mountain region. The proportion of sourwood also increases to such an extent in the Piedmont Region as to become a marked characteristic of its forests, and is indicative of a scant soil. It is worthy of note that, with the extinction of the herbage which originally mantled the soil and kept it moist, the chestnut has almost disappeared in half a century from the upper midland counties, and is dying out slowly in the Piedmont Region.

The soils of this county resemble those of Rockingham, being predominantly yellow and gray gravelly loams, with occasional red clay belts, the former well adapted to the production of the higher grades of tobacco, which constitutes the chief element of its agriculture, and in the total product of which this county stands very high. Its manufac-

turing facilities are great but undeveloped, and it is rich in iron ores. Its agriculture has the advantage of the presence of several limestone beds, and there are also outcrops of semi-bituminous coal in the south-eastern section.

The Sauraton Mountains, a short but bold and picturesque range, uplift themselves about the centre of the county to an elevation of about 1,800 feet above the mean level of the adjacent country, and as a continuation of that chain the solitary Pilot, with its high castellated crest, stands out alone upon the landscape, the wonder and also the guide of the aborigines, and the admiration of their civilized successors. Around the bases of these mountains the country is rough and broken, abounding in minerals and also in mineral springs of marked value. This broken formation lies in the north-western part of the county.

Along the Dan and its tributaries the land partakes much of valley formation, much of it being included in what is known as the Dan River coal basin, a pre-historic sea-basin, whose surface is exceedingly fertile, and from whose bowels it is hoped great treasure of coal is to be drawn. Besides coal, which is proven to exist, and lime, which is known to abound, vast beds of iron are found, and their value demonstrated and in process of development.

Few counties in the State have greater agricultural resources. The rich valleys bear enormous crops of corn, and wheat and other grain crops flourish everywhere. The great crop of the county is tobacco, for which Stokes has long been noted—the dark rich leaf that characterizes the adjacent counties in Virginia, the product of dark, rich soils, and the bright yellow, the gift of the lighter soils, being equally responsive to culture. The crop of 1889, by the census record of 1890, was 3,119,389 pounds, most of which finds a market in Winston, though much of it is manufactured in the county.

There are now good railroad facilities in the county, the Roanoke and Southern running through the north-west corner of the county, and the Cape Fear and Yadkin Valley road through the south-west corner and western edge.

Danbury is the county seat, and, like the other villages of the county, has a small population.

Stokes County has 270,486 acres of land, valued at \$1,002,515, and 251 town lots, valued at \$63,910.

Of domestic animals there are 1,215 horses, 1,524 mules, 3 jacks and jennies, 2 goats, 5,590 cattle, 8,876 hogs, 2,109 sheep.

Product of taxation—for State use, \$4,449.07; pensions, \$703.94; schools, \$6,442.40; county, \$5,528.71.

Population—white, 14,386; colored, 2,813; total, 17,199.

SURRY.

Surry is a north border county, contiguous to the Blue Ridge, and belongs to the Piedmont Section of the State. The Yadkin River is its southern boundary. Its western section is quite mountainous, and there are small mountains in the middle, so that its surface is quite

broken, and its average elevation is nearly 1,400 feet. Its soils and forests are like those of the neighboring counties—Stokes and Forsyth; the high slaty ridges and mountains, as well as much of the rolling surface, having a light gray sandy loam soil and forests of oak and pine, with sourwood and chestnut, while the better tracts of reddish clay loams have a predominant growth of oaks, hickory, poplar, etc., with little or no pine.

The agriculture of the county is like that of Stokes, tobacco of the better grades being the chief market crop, but of greatly less value than the grain product. The water-power of the county is notable, a number of large tributaries of the Yadkin crossing its territory with a fall of several hundred feet. This is a feature common to the whole piedmont region. There are several cotton factories and iron mines and forges in the county.

At the southern extremity of the county the Blue Ridge takes a northern trend, throwing the mass of the county towards the east—a broken but not a mountainous country, with much of rich arable land, and intersected with numerous fertile valleys. The Blue Ridge, in this part of its course, is remarkably prolific in bold streams, which rapidly contribute to the formation of the large river Yadkin, which catches all these affluents on the south border of the county. Among these streams are the Ararat, Fisher's, Mitchell's and Elkin, all within the territory of Surry, all with productive valleys, and all with remarkably fine water-power.

The mineral interests of the county, confined chiefly to iron, have had no substantial development as yet, from deficiency of transportation. The construction of the Winston and Wilkesboro road up the Valley of the Yadkin, along the southern boundary, and the construction of the Cape Fear and Yadkin Valley road as far as Mount Airy, assure material changes at no distant day.

Tobacco is the most important crop, the returns for the year 1889 showing a crop of 1,429,025 pounds. The other principal crops are corn (a crop nearly monopolizing the broad Valley of the Yadkin from its sources to the borders of Stanly), wheat, oats, rye, grass; and the fruits of the country thrive to great perfection.

The most noted manufacturing industry of the county is the woolen-mill at Elkin, in which blankets of extraordinary beauty and excellence are made; and cotton-mills and tobacco factories at Mount Airy.

The Cape Fear and Yadkin Valley road extends from Mount Airy to Wilmington, and makes universal connections. The Winston and Wilkesboro road, an extension of the North-western North Carolina road, skirts the southern border of the county.

Dobson is the county seat, with small population. Mount Airy has a population of 1,768. Here are cotton-mills, tobacco factories, sales warehouses, and in the vicinity exhaustless quarries of fine granite, now extensively worked. Elkin has a population of 288.

Surry County has 281,931 acres of land, valued at \$1,002,515; and 251 town lots, valued at \$63,916.

Of domestic animals there are 1,215 horses, 1,521 mules, 3 jacks and jennies, 5,590 cattle, 8,876 hogs, and 2,109 sheep.

Product of taxation—for State use, \$4,449.07; pensions, \$709.94; schools, \$6,442.40; county, \$5,528.71.

Population—white, 16,926; colored, 2,355; total, 19,281.

SWAIN.

Swain County lies north of Macon and Jackson, along the waters of the Tennessee River, and on the flanks of the great Smoky Mountains on the north, which here reach their culmination in elevations of nearly 6,700 feet. With the exception of some open valley tracts near its centre, along the before-mentioned river and its tributaries, the territory of this county is exceedingly rugged and broken. The proportion of cultivable land is very small. It is heavily timbered, even to the highest summits of the Smoky Mountains, with the prevalent mountain forest growths. The higher levels of the Smoky Mountains, above 5,000 feet above sea-level, are covered with forests of firs, while the more elevated coves abound in white pine and hemlock, and its deep gorges and lower slopes with maple, poplar, linden, hickory, chestnut, buckeye, walnut, magnolias and cherry. The summits of the high mountains furnish fine natural pasturage, and grazing has always been the chief industry.

Clingman's Peak, in the Smoky range, is 6,660 feet high, the loftiest of the whole range, and is in a group of mountains between Pigeon and Tennessee Rivers, where this long chain attains its maximum elevation. The south faces of these mountains are very fertile, and covered with trees of enormous magnitude. Their varieties are named above. The soil of these mountains is so deep and fertile that with the exception of an occasional "bald" or grass-covered summit the growth of heavy timber extends to the top, the balsam fir here attaining its greatest height and diameter, not equalled elsewhere in the North Carolina mountains.

The soil, similar to that of Madison County, has proved very suitable to the culture of fine tobacco, and the lands are being applied to that use. The advance in culture is shown by the progress from 1879, when the crop was stated at 1,160, and in 1889 at 47,543. Owing to the rugged nature of the county, and the usually trough-like character of the valleys, relatively a small proportion of the land is in cultivation. Corn, wheat, rye and oats are the chief crops.

The Western North Carolina Railroad finds its way through the county down the banks of the Tuckaseege and then up that of the Tennessee.

At the junction of these streams is one of the largest and most complete saw-mill works in North Carolina.

These rivers, and the Ocona Luftee, are the chief streams in the county. There are other large mountain streams, such as Forney's, Hazel and Deep Creek, famous for trout, and also the wild game along their borders.



CROSSCUP & WESTINGHOUSE

GRANITE QUARRY, NEAR MOUNT AIRY.

Along the Ocona Luftee, the Soco, and a portion of the Tuckaseege Rivers, lies the greater part of the reservation for the Cherokee Indians. They number, according to the census returns for 1890, 711 souls. They have adopted the habits of the whites, are christianized, go to school, pay taxes, and vote. At Yellow Hill, on the Ocona Luftee, the Government has provided them a farm connected with a school, where they are well instructed in elementary branches and in mechanical, agricultural and domestic pursuits.

Bryson City is the county seat. It is the seat of several steam saw-mills and wood-working establishments. Whittier is a small village, similarly occupied.

Swain County has 426,152 acres of land, valued at \$453,976, and 144 town lots, valued at \$37,823.

Of domestic animals there are 420 horses, 180 mules, 3 jacks and jennies, 4,877 cattle, 8,109 hogs, and 2,185 sheep.

Product of taxation—for State use, \$1,780.94; pensions, \$276.39; schools, \$2,995.30; county, \$3,953.95.

Population—white, 5,652; colored (including 711 Indians), 925; total, 6,577.

TRANSYLVANIA.

Transylvania is a true mountain county, having on its whole southern border the Blue Ridge in its most massive and imposing form; and also being the starting point for the Pisgah and Balsam ranges, which stretch through the county towards the north. The only exception to the rugged nature of the surface is presented by the valleys along Davidson's River, and along the French Broad and its tributaries, all of which flow through broad and fertile valleys, and all of these in cultivation and in a high state of improvement. These valleys are the foundation of the stock-raising which at present is the great source of revenue to the county; and great efforts by intelligent men are made to improve breeds, and still further develop this important industry. Much the larger portion of the county is in forest, covered with the usual timbers of the mountain, all of which attain enormous size from the great fertility of the soil.

The land reduced to tillage produces grasses, the cereals, tobacco and all the fruits of the temperate zone in great excellence.

There has been no development of mineral treasure, but there is enough known to predicate in the future a large exposure of mines of gold, silver, lead, nickel, copper, asbestos, corundum and mica, all of which are known to exist in the wilderness of the Balsam and Pisgah solitudes.

The south end of the county is an elevated plateau of considerable breadth and of unique characteristics. A portion of it is a broad valley of such dimensions as to give birth and dignity to a river of considerable size, which drags a sluggish length through a wide area of cultivation for fifteen miles or more, and then tumbles into the valley of the French Broad, 1,000 or 1,200 feet below, over the steep escarpment which guards the plateau on all sides, in a series of water-falls,

the highest and fullest among the mountains. Cæsar's Head, a promontory of 1,800 feet in height, at a point where the Blue Ridge makes a short projection into South Carolina, is on the southern side of this escarpment.

There is no railroad entering this county, which is a great hindrance to its development. A part of the Knoxville, Western and Carolina road is graded across the plateau above mentioned, but work on it is at present suspended. Companies are organized for other lines, but nothing has been done.

The French Broad River, which, in its upper course, is a placid stream with little perceptible fall, has been made navigable from Brevard to within twelve miles of Asheville by the work of the General Government. But though a steamboat was placed on the river, no useful results have followed except in the improved facilities for floating logs and timber to the mills below.

Brevard is the county seat.

Transylvania has 190,020 acres of land, valued at \$473,141, and 86 town lots, valued at \$12,225.

Of domestic animals there are 656 horses, 352 mules, 6 jacks and jennies, 57 goats, 5,070 cattle, 5,256 hogs, and 5,491 sheep.

Product of taxation—for State use, \$1,815.43; pensions, \$277.06; schools, \$2,975.54. (No county taxes reported for 1890).

Population—white, 5,368; colored, 513; total, 5,881.

TYRRELL.

The description of Tyrrell County may be given by simply repeating that of Washington, except that the great intersound swamp extends over a larger part of the county. Its northern third, lying on Albemarle Sound, resembles in all its features the corresponding portion of Washington. No part of it rises twenty feet above sea-level. It is bounded on the east by the great projection from Albemarle Sound known as Alligator River, which has a depth nearly equal to that of the sound and a breadth of from three to five miles. A portion of the rich border land of Lake Phelps lies within this county. In the southeastern corner, along Alligator River and its tributaries, and on the western side, these lands are semi-swamps and oak flats, and have a gray silt and clay loam soil.

What is said of the resemblances between these two counties will be more fully said in the account of Washington. Tyrrell produces about 1,500 bales of cotton annually, a good crop of corn, potatoes, peas, and about half a million pounds of rice, to which the drained swamp land is well adapted. Its chief industry is in the products of the forest, abounding in juniper, cypress and gum. On its shores are valuable fisheries. It is washed on its north side by Albemarle Sound and on the east by Alligator River, an arm of the sound nearly as wide as the parent body.

Columbia is the county seat.

Tyrrell County has 149,414 acres of land, valued at \$332,738, and 46 town lots, valued at \$25,525.

Of domestic animals there are 364 horses, 312 mules, 3,701 cattle, 6,169 hogs, and 1,665 sheep.

Product of taxation—for State use, \$1,486.67; pensions, \$224.57; schools, \$1,752.75; county, \$3,195.67.

Population—white, 3,000; colored, 1,225; total, 4,225.

UNION.

Union County borders on South Carolina, and lies between Anson and Mecklenburg, from parts of both of which it was formed. The southern portion of the county is penetrated to a distance of several miles by belts of long-leaf pine (sandy lands) on the level-backed divides between the streams. This portion of the county is drained southward into the Pee Dee through South Carolina.

The soils of a larger part of the county are of a slaty origin, and are gray gravelly and sandy for the most part, with occasional areas of red clays. The forests are mixed pine and oak, hickory, etc. The soils of a narrow belt along the west side are granitic. The cotton product belongs mainly to the southern half, the northern portion being devoted to small grains, of which it produces large crops. The chief crop is cotton, of which about 10,000 bales are annually produced. Corn and the small grains constitute the remainder of the agricultural products. Frequent creeks, with rich alluvial bottoms, traverse the county and provide a large extent of fertile arable land.

The Carolina Central Railroad passes through Union County, opening up the markets of Wilmington and Charlotte; and the Georgia, Carolina and Northern road has recently been finished from Monroe to Atlanta, Ga., and, in connection with the Seaboard system, has added another great through line of freight and travel.

Monroe is the county seat, and is credited by the census of 1890 with a population of 1,866. It is a town of great business activity, with cotton factories, banks and public institutions, and will no doubt feel the impulse of its added railroad facilities.

Union County has 385,446 acres of land, valued at \$1,359,119; and 513 town lots, valued at \$258,441.

Of domestic animals there are 1,661 horses, 2,213 mules, 4 jacks and jennies, 93 goats, 7,983 cattle, 11,099 hogs, and 6,910 sheep.

Product of taxation—for State use, \$7,191.12; pensions, \$1,058.83; schools, \$11,848.12; county, \$9,331.29.

Population—white, 15,712; colored, 5,547; total, 21,259.

VANCE.

Vance is a new county, formed out of Granville, Franklin and Warren, and combines the best qualities of those three important counties. It is well situated as to railroad communication, and also as to water-power, character of soil and diversity of crops. The county is traversed

by numerous streams, with fertile lowlands, and the uplands are equally adapted to cotton, tobacco and the cereals. The cotton crop yields annually about 3,000 bales, and the tobacco crop for 1889 is stated by the Census Report of 1890 to have been 1,979,070 pounds. For diversity of crops Vance County yields the palm to none. The principal market crops are tobacco and cotton, which are marketed within the county at fair and remunerative prices. The cotton is of an unusually fine staple, and the tobacco is mostly the fine yellow. In addition to tobacco and cotton, wheat, corn and oats are raised in abundance, while the usual yield of rye, potatoes, millet, peas, beans, peanuts and melons is large and somewhat above the general average of the State. Apples, peaches, pears, plums, cherries, strawberries and grapes have done well and are raised in large quantities in many parts of the county. Along the railroad these fruits are raised for shipment to Northern markets, and, when properly cared for, yield large profits. There are several large vineyards, where the different varieties of wine of superior quality are manufactured in quantities, and profitably.

The county is traversed by the Raleigh and Gaston Railroad, with a branch road to Oxford.

Henderson, the county seat, has a population of 4,191, has several tobacco factories, sales warehouses, in which are annually sold between 6,000,000 and 8,000,000 pounds of leaf tobacco, and is the market for from 6,000 to 8,000 bales of cotton. The growth of Henderson has stimulated the industrial activity of the surrounding country to very marked extent. The town proved to have been most advantageously situated. The tobacco and cotton crops here overlap each other. Until within the past few years very little or no tobacco was raised east of Henderson, and very little or no cotton west. Now the bright yellow tobacco, for which this section is so famous, is raised in large quantities east as well as west of Henderson; and cotton is planted successfully west as well as east of this town.

Kittrell has a population of 317. Middleburg and Williamsboro have smaller populations.

Vance County has 164,007 acres of land, valued at \$1,140,054; and 741 town lots, valued at \$612,311.

Of domestic animals there are 1,484 horses, 495 mules, 59 goats, 3,312 cattle, 6,148 hogs, and 949 sheep.

Product of taxation—for State use, \$7,519.17; pensions, \$978 68; schools, \$6,509.25; county, \$7,571.08.

Population—white, 6,434; colored, 11,147; total, 17,581.

WAKE.

Wake County, in which the Capitol of the State is situated, is one of the largest counties in the State, and shows the largest product of cotton. It is drained by the tributaries of the Neuse, and lies on the eastern margin of the oak uplands, its southern and eastern sections partaking of the agricultural features of the oak and pine gravelly hills, the forests being made up of long-leaf and short-leaf pines, oaks, hickories,

dogwoods, etc. The northern portion of the county, as well as the western, is quite hilly and broken in surface, especially along the streams, and the soils are predominantly gray and yellow sandy and gravelly loams, with occasional areas of red clay.

Wake County was established in the year 1770, and was named in honor of the Wake family, into which the then Governor of North Carolina (Tryon) had married. It was formed from portions of Orange, Johnston and Cumberland Counties, and lies midway between the Alleghany Mountains on the west and the Atlantic Ocean on the east.

Politically the centre of the State, by singular coincidence it appears to be the agricultural centre—a common ground on which the crops of opposite sections find congenial soil. Thus, it is the largest cotton-growing county in the State, the crop reaching as much as 30,000 bales annually. The tobacco crop yields from 500,000 to 800,000 pounds annually, its corn crop is the largest in the State, its wheat crop is a large one, its oat crop is a good one, and it has proven high capacity for grasses and clover, and excellent adaptation to dairy-farming. It is well suited for fruits of all kinds, and is of surpassing virtue in the perfection of the grape.

The county is rich in minerals. For many years an extensive vein of plumbago has been known to lie in the vicinity of Raleigh, which, at one time, was extensively worked. Serpentine, asbestos and steatite abound in some localities, and excellent granite is found near Raleigh and in the vicinity of Rolesville. Out of the granite obtained on the eastern margin of Raleigh the State Capitol was built.

The county is intersected by railroads, all centering upon Raleigh—namely, the Raleigh and Gaston, with its extension south-west, the Raleigh and Augusta Air-Line; and the North Carolina road, with its east and west connections, which so cross each other at right angles as to divide the county into four equal sections, thus giving all equal advantages.

Neuse River passes through the center of the county from north-west to south-east, fertilizing along its course a large body of productive land and providing great water-power, utilized for paper-, saw- and flouring-mills.

Raleigh is the capital, with a population of 12,678 by the census of 1890. Here are the State Capitol, the Supreme Court buildings and Library, the Agricultural Department, the State Hospital for the Insane, the Deaf and Dumb and Blind Asylum for the whites, and a similar institution for the colored race, the State Penitentiary, the State Agricultural and Mechanical College, the State Fair buildings, St. Mary's School (female), Peace Institute (female), Shaw University (colored), graded schools for both races, hotels, the Governor's Mansion, the United States Court building and Post-office, churches for all denominations, etc. There is a liberal system of electric street railroad, electric and gas-lighting, water-works, sewerage, telephone exchange and other conveniences, a cotton exchange and cotton compress, and numerous manufacturing and industrial works, among them two cotton factories and a fertilizer factory.

Cary, a village lying both on the North Carolina and the Raleigh and Augusta Air-Line roads, has a population of 423; Apex, a population of 269; Rolesville, of 150; Holly Springs, of 218; Morrisville, of 150. Wake Forest College town has a population of 853.

Wake County contains 505,625 acres of land, valued at \$3,392,072 and town lots valued at \$3,109,257.

Of domestic animals there are 2,640 horses, 2,947 mules, 13 jacks and jennies, 440 goats, 8,827 cattle, 17,783 hogs, 3,029 sheep.

Product of taxation—for State use, \$25,858.87; pensions, \$3,121.98; schools, \$23,147.22; county, \$23,225 95.

Population—white, 26,093; colored, 23,114; total, 49,207.

WARREN.

Warren County lies on the northern border of the State, and is bounded in part by the Roanoke River, the tributaries of which drain about one-half of its territory, the southern half being drained by the Tar River. Through the middle of the county, along the divide between these rivers, lies a wide, level, and undulating tract, with forests of oak and short-leaf pine, hickory, dogwood, etc., having generally a soil of the class of gray and yellowish gravelly and sandy loam, and frequently belts of red clay loam. Northward and southward the land becomes more hilly, and near the streams the soil is more clayey and often reddish in color. Many of these streams are bordered by narrow strips of level bottom land. The tributaries of the Tar on the southern side are separated by wide tracts of nearly level oak uplands, and are bordered by extensive bottoms. This portion of the county is also less broken than the northern. The agriculture of the county is divided between the production of cotton, tobacco, and the cereals; but the vine and the peach flourish, especially in the northern and western sections lying within the hill country. The western border of the county rises to an elevation of 500 feet, so that there is abundant water-power developed by the fall of its numerous streams, many of which leave its territory at an elevation of less than 200 feet. Gold mining has been a profitable industry in the southern corner of the county and the neighboring parts of Halifax, Nash and Franklin.

Cotton is a crop of much importance, the annual yield being between 7,000 and 9,000 bales. Tobacco has always been a heavy crop, the quality being mostly of the dark heavy grades, though, in recent years, there has been a large proportion of bright yellow. The crop of 1889 is stated at 847,150 pounds. Wheat grows with healthful luxuriance, and the yield is very great, and all the other cereals produce abundantly.

The county is traversed by the Raleigh and Gaston Railroad, from which there is a branch road to Warrenton.

Warrenton is the county seat and has a population of 740; Littleton of 554.

Warren County has 265,664 acres of land, valued at \$1,228,445, and 256 town lots, valued at \$196,290.

Of domestic animals there are 1,545 horses, 447 mules, 1 jack, 84 goats, 6,650 cattle, 7,968 hogs, and 1,478 sheep.

Product of taxation—for State use, \$5,690.15; pensions, \$824.85; schools, \$6,978.50; county, \$6,152.37.

Population—white, 5,880; colored, 13,480; total, 19,360.

WASHINGTON.

Washington County lies on the southern shore of Albemarle Sound and Roanoke River, and extends southward into the great intersound, or Alligator Swamp. Only about one-half its territory, next to Albemarle Sound, has been brought into cultivation to any extent, the southern half remaining in its original condition. The cultivatable portion consists mainly of oak flats, having a close gray clay loam soil and a growth of oak, hickory, beech, maple, and short-leaf pine, with flattish ridges here and there which have an intermixture of long and short-leaf pine and sandy loam soils. The former are generally quite fertile. The southern portion of the county is swampy, and is characterized by the presence of two considerable lakes, Phelps and Pungo, which occupy the highest portions of the swamp, and from which many of the streams of the county take their rise. Around the margins of these lakes are narrow belts or ridges of swampy, mucky land, which were originally covered by heavy forests of gum, ash, maple, cypress, poplar, etc. The soils are of great depth and indefinite fertility. Much of the swamp land of this portion of the county is peaty and worthless, except for timber. The south-western section consists partly of semi-swamps, with gray, fertile loams, and partly, in the "Longacre" country, of pocosons, with a small growth of pine and scrub oaks, very flat, with an ashen soil of close texture, silicious, but as impervious as clay.

More cotton is produced than would be predicated on the prevalence of swamps. But the land is very rich, and the crop reaches from 3,000 to 3,500 bales annually. Large crops of corn are raised, and also of sweet potatoes. A considerable quantity of rice is raised. Along the shore of Albemarle Sound there are productive fisheries of shad and herring. The chief industry of the southern half of the county is in the products of the forest. There is every facility of water transportation. Pungo Lake and Lake Phelps are connected with the sound by canals large enough to admit access to the sail vessels used in shipping the products of the farms.

Plymouth, the county seat, on the Roanoke River, has a population of 1,212, Creswell of 200, and Roper village of 400.

Washington County has 170,064 acres of land, valued at \$511,318, and — town lots, valued at \$119,355.

Of domestic animals there are 653 horses, 450 mules, 1 jack, 25 goats, 3,043 cattle, 6,372 hogs, and 876 sheep.

Product of taxation—for State use, \$2,775.72; pensions, \$408.66; schools, \$4,091.31; county, \$6,205.21.

Population—white, 4,961; colored, 5,239; total, 10,200.

WATAUGA.

Watauga County occupies the whole breadth of the narrower part of the transmontane plateau, being bounded for the most part north-westward by the Smoky range and south-eastward by the Blue Ridge. It is traversed in a northerly course by two massive cross-chains connecting the summits of the Blue Ridge and Smoky Mountains, the Rich Mountains and the chain of Hanging Rock and Beech. Its average elevation would about equal that of Ashe County—3,500 feet. Its whole surface is rugged and mountainous, with the exception of a few limited tracts along the two principal rivers, where considerable valleys open out, with occasional stretches of bottom lands. The soils and forests, as well as the predominant agricultural features of this county, are like those of Ashe County. There is great abundance of chestnut in its forests, and on the Rich Mountains there are great quantities of linden. Its high levels and benches are the best grass lands in the State, and in consequence cattle-raising enters largely into its agriculture. It also produces corn and small grains in considerable quantities, including wheat, rye and buckwheat, the county leading in the last-named crop. Of the county area, 18.89 per cent. is tilled land, of which very little is cultivated in cotton.

Watauga is one of the best of the mountain counties of North Carolina, less developed than most of them, but behind none in its natural resources as a grain, grass, live stock, dairy, fruit, wine and lumber region. It abounds in undeveloped mineral wealth, one of the many copper mines in and around Elk Knob being the only one which has as yet been actively worked, and extensive operations on it have been commenced and profitably pursued, but, for sufficient causes, operations have been suspended.

Boone, the county seat, is at an elevation of 3,342 feet above sea-level, the most elevated county seat in the United States.

The famous summer resort, Blowing Rock, is on the southern margin of the Blue Ridge. It is at an elevation of 4,090 feet above the level of the sea, and is equipped with good hotels for the entertainment of yearly increasing swarms of visitors. Within a short distance is the famous Grandfather Mountain, the highest point in the Blue Ridge Mountains. A few miles from Blowing Rock is the summer resort of Linville.

Watauga County contains 219,190 acres of land, valued at \$773,954, and 124 town lots, valued at \$23,897.

Of domestic animals there are 1,562 horses, 400 mules, 16 jacks and jennies, 15 goats, 8,463 cattle, 8,318 hogs, 8,180 sheep.

Product of taxation—for State use, \$3,077.46; pensions, \$486.65; schools, \$3,774.22; county, \$8,269.89.

Population—white, 10,180; colored, 431; total, 10,511.

WAYNE.

Wayne County lies eastward of Johnston County, south of Wilson County, and west of Greene, on the waters of the Neuse, which crosses its middle portion and drains almost the whole of it directly and by its tributaries. This county resembles in all respects the adjoining counties already described. Along the Neuse River and some of the other streams are considerable bodies of alluvial land and semi-swamp, and not infrequently fringes of cypress and gum swamp. Along the south bank of the Neuse is a narrow zone of pine barrens, conforming in its general trend to the curves of that river, and having a breadth of from one to three miles. Both this county and Johnston have still considerable areas of turpentine and timber lands.

The cotton and grain products of Wayne County are large, and those of rice and potatoes are considerable. There is an abundance of marl, and it has been used very profitably in former years; but latterly, as in the cotton region generally, commercial fertilizers have usurped the place of nearly all others.

The cotton crop of Wayne County is its largest money crop, in 1889 amounting to 12,394 bales. The fertility of the soil along the margins of the rivers and streams, where careful drainage has been effected, assures abundant returns in corn, wheat, potatoes, peas, and also in rice, which has become in recent years a large and remunerative crop. Truck farming is also pursued on a large scale, and also the culture of berries and small fruits for the Northern markets, abundant railroad facilities creating the means of successful competition with all Southern rivals. And these facilities, extended in all directions, have stimulated all industries, agricultural and mechanical, to the extent of greatly advancing the prosperity of the whole county.

The Wilmington and Weldon road passes through the county; the Atlantic and North Carolina road connects it with Newbern and Morehead City; the North Carolina road, of 223 miles in length, unites it with all points of the State west of it, and the Midland road connects it with Smithfield and the short-cut of the Wilmington and Weldon road, contributing to create at Goldsboro a commanding and important railroad centre. The Neuse River is navigable from Newbern through Wayne County, but is little used by steamboats above Whitehall, in the south-east corner of the county.

At or near Whitehall are the mineral springs known as the Seven Springs, valued for their number and their varied and efficient curative qualities. They will be spoken of in a future chapter.

Goldsboro is the county seat, favorably situated at the intersection of the railroads already named. By the census of 1890 it had a population of 4,017. The city contains a cotton factory, rice-mill, furniture factory, agricultural works, knitting factory, cotton-seed oil-mill, lumber mills, cigar factory, and other minor industrial works. Fremont has a population of 377.

Wayne County has 325,045 acres of land, valued at \$1,975,991, and 1,065 town lots, valued at \$1,085,261.

Of domestic animals there are 1,624 horses, 1,916 mules, 1 jack, 2,521 goats, 6,588 cattle, 25,924 hogs, 1,303 sheep.

Product of taxation—for State use, \$12,939.81; pensions, \$1,624.10; schools, \$13,450.70; county, \$13,842.97.

Population—white, 15,115; colored, 10,985; total, 26,100.

WILKES.

Wilkes County lies west of Surry, and differs from it only in being more mountainous and rugged and having a greater average elevation, not less than 1,500 feet. Its northern margin rests on the summits of the Blue Ridge (at an elevation of from 3,000 to 4,000 feet), its southern on the Brushy Mountains (from 2,000 to 2,500 feet above sea-level), and its whole surface is carved into a succession of mountain ridges and narrow intervening valleys by the Yadkin and its numerous tributaries. Its agriculture and its forests may be described in the same terms as were those of Surry, except that, with the increase of elevation, the growth of chestnut increases, and a new forest element enters, to a small extent, in the white pine (*P. strobus*), both in the South Mountains and on the flanks of the Blue Ridge. Along the margin of the Yadkin River and its larger tributaries are frequent and wide tracts of sandy and clay bottom lands. In various parts of the county are small areas of reddish clay soil, but much the larger part of it shows the average oak upland soil, yellow or gray sandy loam. The lighter soils are well adapted to the highest grades of tobacco, the culture of which begins to enter largely into its agriculture. The water-power of the county is very large, the sources of its multitude of rivers having an elevation of from 2,000 to 3,000 feet above tide, and their mouths less than 1,000 feet. This county lies mainly between the highest ridges of the Blue Ridge on the north-west, and those of the Brushy Mountains on the south-east. The slopes of these two mountain ranges furnish the watersheds which meet in the Yadkin River. These watersheds abound in streams of much beauty, furnishing at the same time, by means of their many waterfalls and shoals, very abundant water-power, while along their banks there is very fertile and beautiful land for farming purposes. The number of these streams is somewhat remarkable. Among them are the Mulberry, Roaring River, Reddie's River and Little Elkin on the north side, and Moravian and others on the south, whose united waters soon create the flood-tide of the Yadkin, serving the double purpose of mighty and exhaustless water-power and the presentation of a series of broad and fertile valleys, scarcely equalled on the American continent. These valleys are all remarkable for their productiveness in corn, fertilized by the sediment deposited at every overflow, but an overflow so gentle and gradual as to involve no damage to the land or growing crops. Wilkes is not a large producer of tobacco, the crop of 1889 being given as only 17,322 pounds; but its soil invites to the larger culture of it, and recent added facilities of access to market encourage the

ambitious energy of the farmers. Cotton is so little appropriate, either to soil or climate, that in 1889 only sixteen bales appear to have been made. But in all the small grains, in potatoes and in fruits, everywhere in Wilkes is exuberance and excellence.

The Winston and Wilkesboro Railroad, an extension of the Northwestern North Carolina road, extending from Winston to North Wilkesboro, a distance of seventy-five miles, opens up a section heretofore accessible with difficulty, touching innumerable mainsprings of prosperity and giving promise of the speedy development of a most fertile country, rich in all the elements of industrial wealth, and enjoying all those advantages of healthfulness and scenic beauty common to the whole Blue Ridge country of North Carolina.

Wilkesboro is the county seat, with a population of 336. United with North Wilkesboro, on the north side of the Yadkin, by elegant iron bridges. North Wilkesboro, the present terminus of the railroad, is a new and growing town.

Wilkes County has 436,604 acres of land, valued at \$960,464, and 181 town lots, valued at \$34,500.

Of domestic animals there are 1,840 horses, 1,078 mules, 31 jacks and jennies, 23 goats, 11,308 cattle, 17,101 hogs, and 6,512 sheep.

Product of taxation—for State use, \$4109.00; pensions, \$663.96; schools, \$6,406.94; county, \$13,776.69.

Population—white, 20,633; colored, 2,042; total, 22,675.

WILSON.

Wilson County lies on the western border of the long-leaf pine belt, and its soils belong almost exclusively to the region of level upland piny woods, and correspond to those of Edgecombe. This county is traversed by numerous streams, the most notable of which is the Contentnea, along which, as well as its tributaries, are found considerable tracts of alluvial land and swamps (gum and cypress). In all respects the agriculture of this county repeats that of Edgecombe, both as to practice and as to results. Marl is found in the eastern half of the county.

Wilson is a large cotton producing county, the crop for 1889 being returned in the census report for 1890 at 11,129 bales.

It is altogether a thrifty, prosperous county with numerous elements of prosperity. It is traversed by the Wilmington and Weldon Railroad, advantageous to its industry and promotive of the creation and growth of several thrifty towns. Wilson, the largest of these, is the county seat, with a population of 2,126. Here is a cotton factory, tobacco sales houses, fruit and flower nurseries, a female college, graded schools, churches, etc. Black Creek has a population of 191, Saratoga of 100, and Toisnot of 482.

Tobacco culture has recently developed with rapidity in Wilson County, almost altogether in the best qualities. In 1879 the crop was stated officially to be 8,745 pounds. In 1889 it is returned in the census report at 232,966 pounds. Sales warehouses have been erected in the town of Wilson, and the prospect is for steady increase in production

In Wilson County there are 228,928 acres of land, valued at \$1,538,660, and 615 town lots, valued at \$618,924.

Of domestic animals there are 1,039 horses, 1,723 mules, 2 jacks and jennies, 1,870 goats, 3,581 cattle, 16,606 hogs, and 1,470 sheep.

Product of taxation—for State use, \$9,143.04; pensions, \$1,236.95; schools, \$9,786.76; county, \$4,190.82.

Population—white, 10,884; colored, 7,760; total, 18,644.

YADKIN.

Yadkin County lies immediately north of Davie, in the bend of the Yadkin River, which bounds it northward and eastward. It is traversed in a nearly east and west course by the Brushy Mountains, which here drop down into low spurs and swells, the average elevation of the county being probably not greater than 1,200 feet. Its soils and forests are like those of Davie County. Its agricultural interest is divided between the production of tobacco and grain crops, the product of the latter nearly reaching half a million bushels. Cotton culture has invaded its southern border to a small extent within a few years. There are several iron mines in the county, but they have been little worked, as they are too far from market.

The tobacco crop for 1889 is stated officially to have been 373,672, while that of 1879 was 177,595. The cotton crop for 1889 was only 5 bales, while that of 1879 was 26.

Yadkin County being bounded on the north and east by the Yadkin River, has the benefit of the Winston and Wilkesboro road which runs along the north bank of that stream. There is no railroad in the county.

Yadkinville is the county seat, with a population of 175.

Yadkin County has 212,701 acres of land, valued at \$926,126, and 295 town lots, valued at \$46,168.

Of domestic animals, there are 1,329 horses, 1,202 mules, 20 jacks and jennies, 5 goats, 4,878 cattle, 8,131 hogs, and 2,483 sheep.

Product of taxation—for State use, \$3,699.98; pensions, \$599.21; school, \$4,654.47; county, \$5,082.73.

Population—white, 12,421; colored, 1,369; total, 13,770.

YANCEY.

Yancey County lies on the west of Mitchell. This county is pre-eminently mountainous. The Black Mountains penetrate it from the south-east and extend to its centre near Burnsville, the county seat. There are twenty summits of this range in this county rising above 6,300 feet, the highest, Mitchell's High Peak, being 6,717 feet, the highest point in the United States east of the Rocky Mountains. The Smoky Mountains separate this county from Tennessee, the highest peak within its limits being the Bald Mountain, 5,550 feet in height. Numerous cross-chains intersect the county in all directions, leaving very little valley land except along the margins of numerous small streams, with broader ones along the larger streams, Toe and Caney Rivers. But

mountains are the characteristics of the county. These, without exception, are fertile to the very top, covered with deep, rich and friable soil, in their natural condition bearing trees of great size. The walnut often attains the diameter of eight feet, the wild cherry a height of sixty feet to the first limb, and with a diameter of four feet, the poplar with a diameter of ten feet, the black birch or mountain mahogany, the oak of several species, the hickory, maple and ash, the yellow locust and other trees, all of giant size. The quantity, magnitude and excellence of forest stores has attracted attention from abroad, and large supplies are now annually cut, sawed and shipped.

Brought into cultivation, the soil is very fertile, producing all the grains, grasses and fruits, the apples being of notable excellence. Tobacco of great excellence is produced, and the culture is rapidly extending. The mountain sides, when cleared, are finely adapted to all the grasses; large quantities of sheep are raised, and cattle in large numbers are annually driven off to the Virginia markets.

This county is rich in metals and minerals. Magnetic iron abounds but is not yet mined. Other ores of iron are abundant. Copper has been found. Asbestos, corundum and mica are abundant, one of the most prolific veins in the United States being worked near Burnsville.

Tobacco of excellent quality is produced to the extent of 139,464 pounds, according to the Census Report for 1890.

Burnsville, the county seat, has a small population. It is situated at an elevation of 2,840 feet above the level of the sea.

Yancey County has 162,799 acres of land, valued at \$339,812, and 55 town lots, valued at \$10,395.

Of domestic animals, there are 1,185 horses, 587 mules, 10 jacks and jennies, 5,252 cattle, 6,460 hogs, 3,671 sheep.

Product of taxation—for State use, \$1,467.95; pension, \$278.74; schools, \$3,044.89; county, \$3,740.40.

Population—white, 9,197; colored, 293; total, 9,490.

AGRICULTURAL PRODUCTS OF NORTH CAROLINA.

It is now an old story that, in the details of the census reports on the crops and products of the several States of the American Union, in North Carolina only were the divisional columns completely filled under their headings of the various crops produced; and that in this State alone was found in practical and profitable culture whatever else was cultivated in every other State, whether North or South, East or West. However trite this story has become, it can never lose its importance; it emphasizes the fact that North Carolina is that happy middle ground, that fortunate zone of climatic harmonies where the rigors of the Northern cold and the ardors of the Southern heats so meet and blend as to compose, in their tempered extremes, that ameliorated temperature in which the vegetation of all antagonizing climates may find not only life but vigor. And to these happy compromises and compositions of climate are to be added those equally happy conditions of soil which alike favor the gross luxuriant feeder of the Southern fields and the hardy and more abstemious plants of the Northern farms.

This striking peculiarity is largely, if not altogether, due to those causes referred to in the previous chapter on "Forestry," in which it was shown that the difference in elevation between the different extremes of the State, the gradual ascent through a space of nearly four hundred miles from the level of the sea to the heights of the mountain plateaus, alone to be considered in relation to agriculture, is the same in effect as the ascent in latitude, from the almost tropical shores of the Gulf of Mexico to the actually frigid regions of the lakes and the Saint Lawrence. And to the influence of low level on our Atlantic shore is to be added the potent influences of the Gulf Stream, which sweeps along as far as Cape Hatteras within a few miles of the coast, bearing with it something more than balmy mildness; it carries along in its breath a stimulus to vegetable growth, as if its mission were to strew along its long extended track the triumphs of its creative energy and bear even to the poles the trophies of its potency.

Thus is explained why the palmetto, the magnolia and the live-oak are at home on the coast of North Carolina; and thus we find in the fields of Columbus and adjacent counties the sugar-cane of Louisiana as luxuriant in growth, as juicy in its flow of sap and as rich in its yield of granulated sugar as if its juices had been drawn from the teeming soil and ripened by the hot sun of a tropical zone. And, reversing the points of observation, we find the sugar-maple trees of the mountains as bountiful in their flow of sap and as rich in their yield of sugar as if they owed their hardy life to the cold airs of Vermont. In the first case, depression of level has associated our eastern section with the influences of the tropics; in the other its uplift into a mountain elevation has thrust it into assimilation with Canadian atmospheric conditions. It will be well understood, then, as illustrated

by the extremes presented, what a broad, fruitful field North Carolina presents for the profitable culture, if not literally side by side, yet in reasonable contiguity, of all the field crops cultivated in the United States. From its extensive territory, from its east or its west are drawn those large contributions to the maintenance of the people and the commerce of the world—the rice of the coast and the buckwheat of the mountains, the cotton of the South and the flax of New England, the corn, the wheat, the rye, the oats, the barley, the sorghum, the potatoes, the peas, the tobacco, the vegetables, the fruits, the grapes, the everything—which, if North Carolina knew herself, if the stranger knew her as she ought to be known, would make her the most coveted and most prosperous country upon which the sun sheds his fertilizing beams.

In the presentation of the important crops produced in North Carolina it is unfortunate that the full reports of all the crop results have not yet been given to the public in detail. We are under obligations to the Commissioner of the Census for the full report of the cotton and tobacco crops of North Carolina, and will use them so far as they meet present objects. For some of the other crops we present the following summary, assumed to be proximately correct:

There were produced in North Carolina in 1888 of corn 35,830,000 bushels, wheat 5,094,000 bushels, rye 395,000 bushels, oats 8,405,000 bushels, barley 3,000 bushels, buckwheat 57,000 bushels, potatoes 1,114,000 bushels. But this last is evidently erroneous, since in 1880 the yield of sweet potatoes alone was 4,576,148. Irish potatoes alone exceed in quantity the figures named. Rice is not mentioned; in 1880 the yield was 5,609,191 pounds. The quantity has increased, rather than diminished, since.

While claiming for North Carolina an almost universality of production, and that to a high degree of excellence, it is with no boastful purpose to make immodest demands for recognition of her superiority, yet isolated instances might give just foundation for boastfulness, a few of which are here cited:

His Excellency, Governor Thomas M. Holt, made on his Davidson County farm, on eighty acres, on a clover sod and without other fertilizer, an average of over forty-six bushels to the acre.

The wheat of Stanly County has an average weight of sixty-four pounds to the bushel, and seventy-two pounds is not uncommon, such an example being given in the Exhibition at Vienna.

In cotton, Mr. Buffaloe, living near Raleigh, made in 1890, with three ploughs, 100 bales of cotton, an average of a bale and a half to the acre, and has not made less than twenty bales to the horse in many years; and there are many farmers who make from twenty to twenty-five bales per horse in Wake, and also in other counties. Authentic instances are noted in Buncombe County of over one thousand bushels of Irish potatoes to the acre; and one hundred and thirty-seven bushels of corn have been raised on one acre. Of tobacco, it has not been infrequent to make sales of \$650 to the acre.

North Carolina may share in the eulogy pronounced by Chauncey M. Depew before the Alumni Association of Yale College after his return from his visit to the South. He says:

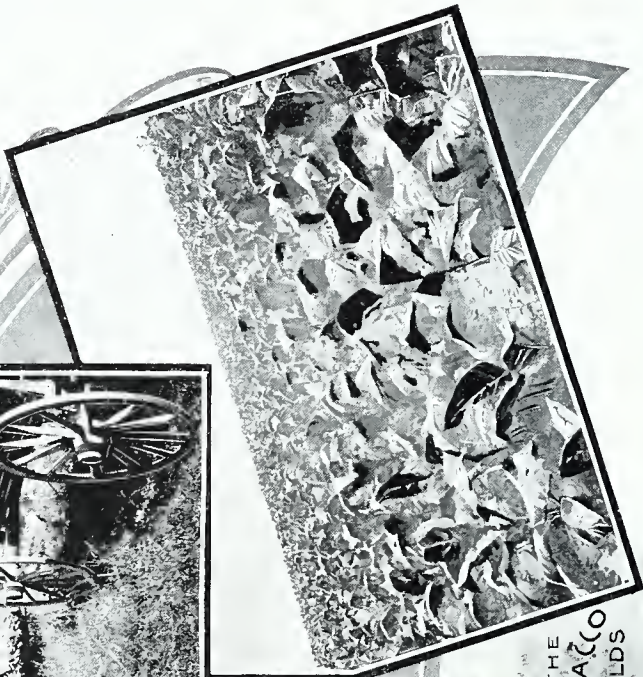
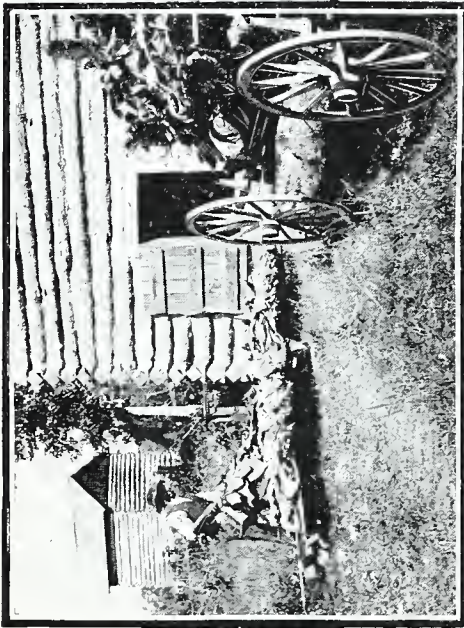
The net results of this visit to the South, to my mind, is just this: that THE SOUTH IS THE BONANZA OF THE FUTURE. We have developed all the great and sudden opportunities for wealth—or most of them—in the North-western States and on the Pacific Slope, but here is a vast country WITH THE BEST CLIMATE IN THE WORLD, with conditions of health which are absolutely unparalleled; with vast forests untouched; with enormous veins of coal and iron which yet have not known anything beyond their original conditions; with soil that, under proper cultivation, for little capital can support a tremendous population; with conditions in the atmosphere for comfortable living, winter and summer, which exist nowhere else in this country; and that is to be the attraction for the young men who go out from the farms to seek settlement, and not by immigration from abroad, for I do not think they will go that way; but by the internal immigration from our own country it is to become in time as prosperous as any other section of the country, and as PROSPEROUS BY A PURELY AMERICAN DEVELOPMENT.

TOBACCO.

This important product has always had leading recognition in North Carolina as well as in Virginia, in which State it became a staple from the earliest colonial times. The plant was a native of the American continent, and its use by the natives prevailed wherever the white discoverers appeared, whether on the islands or on the continental shores; and the whites quickly adopted a fascinating habit, which was acquired with ready facility, for the fascination of its spell fell with equal charm upon the white man as well as upon the savage; and the most precious boon bestowed by the new world, more precious and more humanizing than gold or silver, was that weed which carried in its juices and in its odors that seductive and soothing principle providentially adapted to cheer and to soothe, and to supply at last that elixir which mankind had always been craving, always seeking, and never finding until it was attained in the discovery of the NEW WORLD.

The marvelous avidity with which the discovery was turned to use, the rapidity with which a new and unanticipated habit was created and diffused, was illustrated by the prompt abandonment by the Virginia colonists of their vain search after gold, and the diversion of all their interest and industry to the cultivation of tobacco. As early as 1615, only seven years after the settlement of Jamestown, every acre of the colony was applied to tobacco, even to the neglect of much-needed food crops: for the people of England quickly learned its uses, and the colonists as quickly learned that they possessed a valuable foundation of prosperity, a commodity of which they held the monopoly, one always in demand, one that might assure them commercial strength and independence. With the expansion of the colony into the lands of the interior, the culture of tobacco spread with proportionate rapidity, and the product became almost the sole article of export to England, and the sole medium of exchange. In the absence also of money it also became the legitimate currency of the country, with which merchandise was purchased, salaries paid, taxes discharged, and with which the stipends of the clergy were discharged. And Virginia was formed into a great tobacco paradise, where material and sentimental aspirations were alike supplied and gratified.

With the progress of settlement and the enlargement of colonial territory, North Carolina partook of the agricultural and commercial



IN THE
TOBACCO
FIELDS

habits of Virginia. With the one, as with the other, in those days tobacco was the sole product of the fields that could bring the needed returns in money, or its equivalent, for the labor bestowed; the only item that encouraged conflict with the wilderness to reduce it to cultivation; the only one that promised future wealth to the newly founded Commonwealth. Upon those parts of North Carolina where settlements were made and fields were opened, tobacco was the leading crop, even in those parts where it was subsequently abandoned to be resumed again in our day with more distinction and far more profitable returns. In North Carolina, as in Virginia, tobacco became the currency of the country.

It is well known that until 1857, when the process was discovered of giving to tobacco that bright golden color and that exquisite delicacy of texture which has so greatly enhanced its value—previous to that year various processes were adopted with reference chiefly to the production of chewing tobacco of greater or less excellence by such systems as the habits of generations had approved—sun-curing, kiln-curing, flue-curing, all, however, resulting in a dark material, packed and marketed according to intrinsic value, the lower priced qualities being packed in hogsheads which supplied themselves the place of wagons, revolving on spindles placed in the centre of the circumference of the heads, to which shafts were attached, to which a team of two or three animals was hitched and then dragged off to distant markets—to Petersburg or Fayetteville—through mud and water, to the reduction of whatever value the rude material may have had. For such tobacco prices were only nominal, but it supplied in quantity what was lost in quality; for then tobacco was grown on strong new land, and the leaf grew large, lusty and heavy. But when fine color was made the desideratum in connection with quality, the quality of the soil in reference to color, texture and flavor became a subject of prime consideration, and the cure, preparation and marketing operations of exceeding nicety, profound experience and consummate skill. The results have brought both a revelation and a revolution; a revelation of the capacity of a dark, coarse-leaved, strongly flavored leaved plant for transformation into the golden hued, silky fibred, delicately perfumed article, high-priced Virginia Brights!

Of all the contradictions ever arrayed against indisputable facts, of all the wrongs committed against existing rights, of all the baseless claims ever made against authentic priority, of all the arrogance that lays title to name and fame to that which brings honor and profit to its originator and almost sole producer, none are so unfounded as those which attaches the name of "Virginia Brights" to the unrivalled leaf of North Carolina. It was in North Carolina it had its origin; it was here it made its home, it is here it is destined to live without the fear of successful competition. For with the exception of portions of Halifax and Pittsylvania Counties, in Virginia, it remains the exclusive glory of North Carolina. Nor is it confined to the section in which it originated, or rather where the process that has so magnified tobacco was first perfected. In that section, Caswell and Person, Granville and Vance, Orange and

Durham, Alamance and Guilford, Rockingham and Stokes, Forsyth and Surry; in the east, Nash and Edgecombe, Pitt and Greene, Halifax and Wilson; in the west, Buncombe and Madison, Yancey and Mitchell, Haywood and Swain, are not only large producers of tobacco, but also of bright tobacco, the sole difference in quality being that derived from longer experience in the processes of cure; and from these and other counties not named, are derived nine-tenths of the tobacco that goes on the foreign markets as Virginia Brights. But perhaps the censure we naturally affix upon Virginia for the absorption of an honor properly belonging to North Carolina may be modified by the reflection that the application of her name to our property was, to some extent, natural and unavoidable. From time immemorial our tobacco was taken to her markets and shipped from her ports. It never went to any North Carolina port except in a past period when the heavy tobaccos, in their coarse packages of Chatham, Orange and some other counties, found their way to sea out of Wilmington by way of Fayetteville. The rest went to Richmond and thence to Europe. There it received the name of the State from which it was shipped. Virginia was not reluctant to appropriate the honor thus implied, and was quite willing to be magnified, even at the expense of her neighbor.

Since North Carolina has become a tobacco manufacturing State, which she was not in former days, and since she has become famous the world over for the products of her bright tobacco, her smoking tobacco and her cigarettes, it is due to her honor and her interest that she should make the effort to reclaim what she has lost and iterate the demand for the application of the right name for that which she almost exclusively produces. British commercial nomenclature partakes of all the tenacious, unchanging conservatism that attaches to everything British. The leading dealers and manufacturërs may, by persistent appeal, arouse that sense of justice which is as inherent in the British mind as its conservatism. Let the demand go up with unceasing cry for the application of the proper name, in the European markets, of North Carolina Brights.

EXTENT OF THE TOBACCO AREA IN NORTH CAROLINA.

There are ninety-six counties in North Carolina, of which twelve, viz.: Camden, Carteret, Craven, Gaston, Gates, Hertford, Hyde, Martin, Perquimans, Richmond, Tyrrell, and Washington, are not returned in the Census Report of 1890 as producing tobacco. All of these, except Gaston and Richmond, are in the East where the prevalence of the drained swamp lands and the poverty of the soils may oppose its culture. But it is probable that even in these the plant is cultivated for home use.

VALUE OF THE CROP.

Prices that may seem fabulous have been obtained in numerous sections for the very highest grades of bright tobacco. In Granville, Caswell, Person, Durham, Alamance, and other counties, prices ranging

from \$1.50 to \$3 per pound have not been uncommon. Perhaps the fairest statement, to be accepted as free from exaggeration, is presented by Mr. W. W. Wood, in his address before the Tobacco Association of North Carolina, at Winston, in August, 1891. He has selected groups of farmers in a few counties to illustrate the average of prices. His statements are moderate, as will occur to those acquainted with many more striking examples. He says:

"In Surry County fifteen farmers obtained a combined average price of $26\frac{1}{10}$ cents per pound, the combined average amount produced to the acre being 498 pounds, equal to \$132.46, less cost (\$51.25)—equal to \$81.21 profit per acre.

"In Rockingham County fourteen farmers combined; average price obtained was $32\frac{1}{2}$ cents per pound, the average number of pounds to the acre being 477, equal to \$157.80 less cost (\$51.25), equal to \$106.55 profit per acre.

"In Franklin County eleven farmers obtained a combined average price of $19\frac{3}{4}$ cents per pound, and produced the combined average of 916 pounds to the acre, equal to \$177.09, less cost (\$51.25), equal to \$125.84 profit per acre.

"In Vance County seven farmers received a combined average of $48\frac{3}{4}$ cents per pound, and produced an average of 792 pounds per acre, equal to \$383.13, less cost (\$51.25), equal to \$331.88 profit per acre.

"In Edgecombe County three farmers received a combined average of $19\frac{1}{3}$ cents per pound, and produced an average of 1,493 pounds per acre, equal to \$288.64, less cost (\$51.25), equal to \$237.39 profit per acre. A most wonderful showing, indeed, of pounds per acre.

"In Granville County five farmers received a combined average of $27\frac{1}{10}$ cents per pound, and produced an average of 790 pounds per acre, equal to \$219.62, less cost (\$51.25), equal to \$168.37 profit per acre.

"In Wilson County eight farmers received the combined average of $22\frac{3}{4}$ cents per pound, and produced an average of 902 pounds per acre, equal to \$205.19, less cost (\$51.25), equal to \$153.94 profit per acre."

EXTENT OF THE CROP.

This is always a controverted point between the gatherers of the census statistics and those whose transactions in the markets and elsewhere would seem to give them more accurate sources of information. In the same address Mr. Woods explains the discrepancy upon the habitual reluctance to respond to official inquiry, even to the extent of listing less than half of their personal taxable property. The information of the other is drawn chiefly from the sales-books of the warehouses of the State, conducting sales in twenty-five or more markets in the State, each with from one to five warehouses in which the business is conducted by men of trusted integrity as well as of skill and experience. The conclusion reached by Mr. Wood, in careful examination of the books of these warehouses, is as follows:

"Six of these markets sell annually a total of 51,000,000 pounds, an average of 8,500,000 each, 16,000,000 being the greatest and 5,000,000

the lowest amount sold by any one of them. Nine others of them sell annually a total of 11,500,000, averaging above one and one-quarter millions each, two and a half millions being the greatest and one million the lowest amount sold by any one of them. The remaining ten markets sell annually a total of 4,500,000, averaging about 500,000 each, three-quarters of a million of pounds being the greatest and one-tenth of a million the smallest amount sold by any one of them. These facts are obtained from the most authentic source—from weights and settlements agreed upon between the producers and the purchasers in the public warehouses."

And he adds:

"Thus North Carolina produces annually 76,000,000 pounds of leaf tobacco, and 67,000,000 pounds are sold in North Carolina markets. Deducting 5,000,000 pounds of the amount sold (a full estimate) to cover leaf resold in our markets by speculators and thus twice or more times placed on the sale books of the public warehouses, and all of the leaf sold in our own markets from other States, we find that we have sold 62,000,000 pounds of North Carolina tobacco alone; leaving of the 76,000,000 produced in the State, a balance of 14,000,000 pounds to cover all that is marketed outside of it by our farmers. If Danville, Petersburg and other Virginia markets were to sell annually, as they claim, 30,000,000 pounds for our farmers, who sell also in North Carolina markets 62,000,000 pounds, the production of the State would show the startling figures of 92,000,000 pounds. But I do not claim so much for North Carolina. Due allowance must be made for exaggerations, naturally expected of outside markets, with regard to the amount of leaf they sell for our planters; so I 'charge off' 16,000,000 of the 30,000,000 pounds that they claim to sell, and allow that they sell 14,000,000 pounds only, which, added to the 62,000,000, make 76,000,000 pounds produced in North Carolina as at first stated."

And this is not made up of one variety alone, as might be inferred from previous illustrations of values. "Within her borders is produced such a variety of high-grade leaf and in such quantities as is nowhere else to be found the world over. Upon her high type of cutting leaf the great cigarette business of the world was built up. Her unsurpassed smokers produced in the 'Golden Belt,' placed her granulated smoking tobacco at a premium over all others in the world. Her mahogany types of fillers and wrappers are, by chewers of tobacco everywhere, preferred before all others."

In justice to the faithful, pains-taking, if erroneously informed, gatherers of the tobacco statistics, the following table is published as setting forth the crop of 1889 in the census of 1890. The census of 1880, made under the same conditions, showed the crop of 1879 to have been 26,986,212 pounds.

TOBACCO PRODUCTION IN NORTH CAROLINA FOR 1889.

FROM TENTH CENSUS (UNDERESTIMATED).

	<i>Acres.</i>	<i>Pounds.</i>	<i>Value.</i>
The State	97,077	36,375,258	\$5,175,833
Alamance	3,028	901,922	108,590
Alexander	151	54,774	6,900
Alleghany	2	835	115
Anson	3	626	97
Ashe	14	3,080	445
Bladen	2	530	65
Brunswick	1	110	15
Buncombe	3,049	1,482,688	225,665
Burke	160	83,816	12,045
Cabarrus	2	735	90
Caldwell	137	55,516	7,730
Caswell	8,567	2,510,699	304,295
Catawba	41	16,400	2,280
Chatham	1,173	345,466	56,160
Cherokee	15	2,140	415
Clay	31	6,105	955
Cleveland	1	610	115
Columbus	4	1,370	170
Cumberland	1	260	30
Davidson	1,703	694,480	101,395
Davie	2,593	668,616	74,350
Duplin	6	2,100	150
Durham	3,658	1,274,544	166,200
Edgecombe	119	51,420	10,800
Forsyth	4,119	1,607,323	213,773
Franklin	2,263	859,015	153,935
Graham	4	1,170	90
Granville	11,183	4,170,071	722,675
Greene	24	6,650	706
Guilford	2,517	918,723	117,137
Halifax	274	93,714	14,788
Harnett	6	2,339	287
Haywood	1,707	861,096	137,775
Henderson	61	22,486	3,050
Iredell	447	199,758	23,168
Jackson	54	25,211	2,500
Johnston	60	26,365	3,106
Jones	4	900	110
Lenoir	6	3,000	325
Lincoln	9	4,460	675
McDowell	46	16,319	2,000
Macon	9	3,695	370
Madison	4,749	2,168,823	322,503
Mecklenburg	2	470	52
Mitchell	123	44,488	4,805
Montgomery	4	1,635	205
Moore	116	45,838	6,445
Nash	1,823	782,713	170,630
Northampton	18	5,879	505
Onslow	---	46	5
Orange	2,411	733,508	82,040
Pender	5	2,185	110
Person	7,100	2,327,201	323,713
Pitt	70	27,104	5,175
Polk	11	5,461	985
Randolph	146	50,180	8,800
Richmond	---	30	4
Robeson	48	10,500	780
Rockingham	10,688	4,189,416	489,972
Rowan	390	187,724	22,075
Rutherford	37	10,740	1,225

	<i>Acres.</i>	<i>Pounds.</i>	<i>Value.</i>
Sampson	19	7,655	1,040
Stanly	15	6,200	462
Stokes	7,774	8,119,289	422,663
Surry	3,437	1,429,025	187,775
Swain	93	47,543	5,657
Transylvania	19	6,569	860
Union	1	120	20
Vance	4,979	1,979,070	329,713
Wake	1,378	479,585	85,175
Warren	2,153	846,150	103,230
Watauga	23	4,540	605
Wayne	330	112,010	15,570
Wilkes	59	17,322	1,910
Wilson	483	232,966	40,792
Yadkin	1,004	373,672	48,055
Yancey	315	139,464	16,735

RICE.

This very important and highly valuable crop has been the chief industry and source of wealth only to one section of North Carolina, because of the choice by it of a variety superior to all others in intrinsic merit and market value, and of the existence, in that favored locality, of special natural conditions essential to the perfection of the product not possessed elsewhere in the State. It will be shown that while these conditions, and also the superiority of the products of a certain well defined area are incontestable, no cause forbids why other varieties of rice, of possibly inferior quality, may not be diffused over the State, introduced into portions of it where the success of its culture might now appear chimerical, and not only greatly enlarge the store of human sustenance, but make valuable addition to the subjects of commercial interest.

There are two leading varieties of rice whose names are defined by their nature, and whose habits of growth and maturity are regulated by the systems pursued in culture, whether dry or wet, thus giving in the market distinctions between upland and lowland rice. But the nature and the habits of the two varieties are not so far apart as to be irreconcilable; and the positions of the two might be interchangeable, if desirable, though with possible detriment to both. For rice is a plant of great flexibility of habit, and also of numerous varieties, or rather sub-varieties, of one fundamental original; so that adaptation, not only now but long ago, practically has been found for the plant not only to situation requiring continued moisture, in some stages of growth, to the extent of continued saturation, but for the opposite condition of comparative aridity. Thus among the Philippine Islands sixty-nine varieties are noted grown in the marshy flats of the coast area, thence inland and upland until rice fields are found productive high up the dry mountain-sides. The same variation is found on the continental lands of British India, where culture of rice extends from the soaked morasses of the Ganges far up the sides of the foot-hills of the Himalayas. And this is the case also in Burmah and in China, where rice is essentially the food of all classes and the sole dependence of the poor, so that disaster to the rice crop is the occasion of those ter-

rible famines, the story of which so frequently horrifies those families of mankind to whom sole reliance upon a single crop is almost inconceivable. But the truth is that rice constitutes the chief sustenance of more than half the human family. That it has done so, and by almost the sole virtues of its powers of nutrition, has swelled the population of the peoples dependent upon it to such incredible numbers, is convincing testimony to its efficient adaptation to its uses. With the increase of population in other parts of the world, and the constant pressure upon the sources of food supply, those people whose wants must be supplied with that which is at once cheap and nutritious would be wise to adopt more generally and more confidently the grain which elsewhere has so signally manifested its capacity not only to sustain population, but maintain and perpetuate it in vigor and healthfulness.

As a people the Americans have not taken very kindly to rice. It has been, with many, despised as an effeminate diet, fit only for the invalid or feeble infancy, or if admitted to the table, to come disguised as a dessert or confection. The Northern and the Western people invariably prepare it with sugar, as if it were unable to perform the robust function of a breadstuff or a vegetable, treated as the manipulated product of sago, tapioca or arrowroot. The Southern people, with better knowledge because with larger experience of its virtues, consider it as indispensable upon their tables, either plainly boiled, or entering into the composition of bread, waffles and johnny-(journey)-cakes, and more rarely, of puddings. This is more especially the case in the Southern Atlantic States. Its uses are beginning to find more favor in the interior. The great variety of other breadstuffs in the United States, and the relative smallness of the population, has made the cultivation of new tastes unnecessary. But now the rapid increase of numbers and the vast proportion of non-producers gives warning that the time has come to add all resources attainable for the procurement of a full supply of breadstuffs. An ample resource may be found in rice, if varieties are cultivated in areas of country not dependent upon the wet system of culture.

The first rice introduced into the American Colonies was in the latter part of the seventeenth century. From the few grains planted in the garden of Landgrave Smith, in Charleston, came the stock upon which was founded the subsequent great rice industry of South Carolina, which has always been the centre of the rice-growing region, North Carolina and Georgia. The variety introduced was the "white" rice, such as grown in China and Guiana at the present day, but long since superseded by the "golden seed," introduced just prior to the Revolutionary War, and which has always commanded the highest prices in both home and foreign markets. This is the variety that best thrives in water culture, and this system requires conditions not everywhere attainable. The soil must be rich, the ground must be low, it must be at will under control of overflow, and it must equally be subjected to prompt and thorough drainage. The overflow must be that of fresh water, and the drainage must be controlled by the operation of the

tides. These combinations can only exist near the mouths of fresh-water streams, and as the Cape Fear river is the only stream bearing down a body of fresh water directly to the sea, and the only one materially affected by the rise and fall of the tides, so the marshy lands along its lower course offered the only location in North Carolina that could be successfully adopted. And thus it happens that this section of this State is the centre of the tide-water rice culture and the home of the rice planters, once, more than now, deriving consideration and wealth from the monopoly of the cultivation of a single staple, valuable and always sure of a market. It may be maintained in connection with the golden seed of the Cape Fear that its superiority over all other American rice has been so freely admitted elsewhere, that for generations it has been used as the seed rice of South Carolina and Georgia, some of the Cape Fear planters raising their crops with sole reference to this object. This is due both to the intrinsic excellence of the grain and to its freedom from filth and admixture with inferior qualities, results of careless culture.

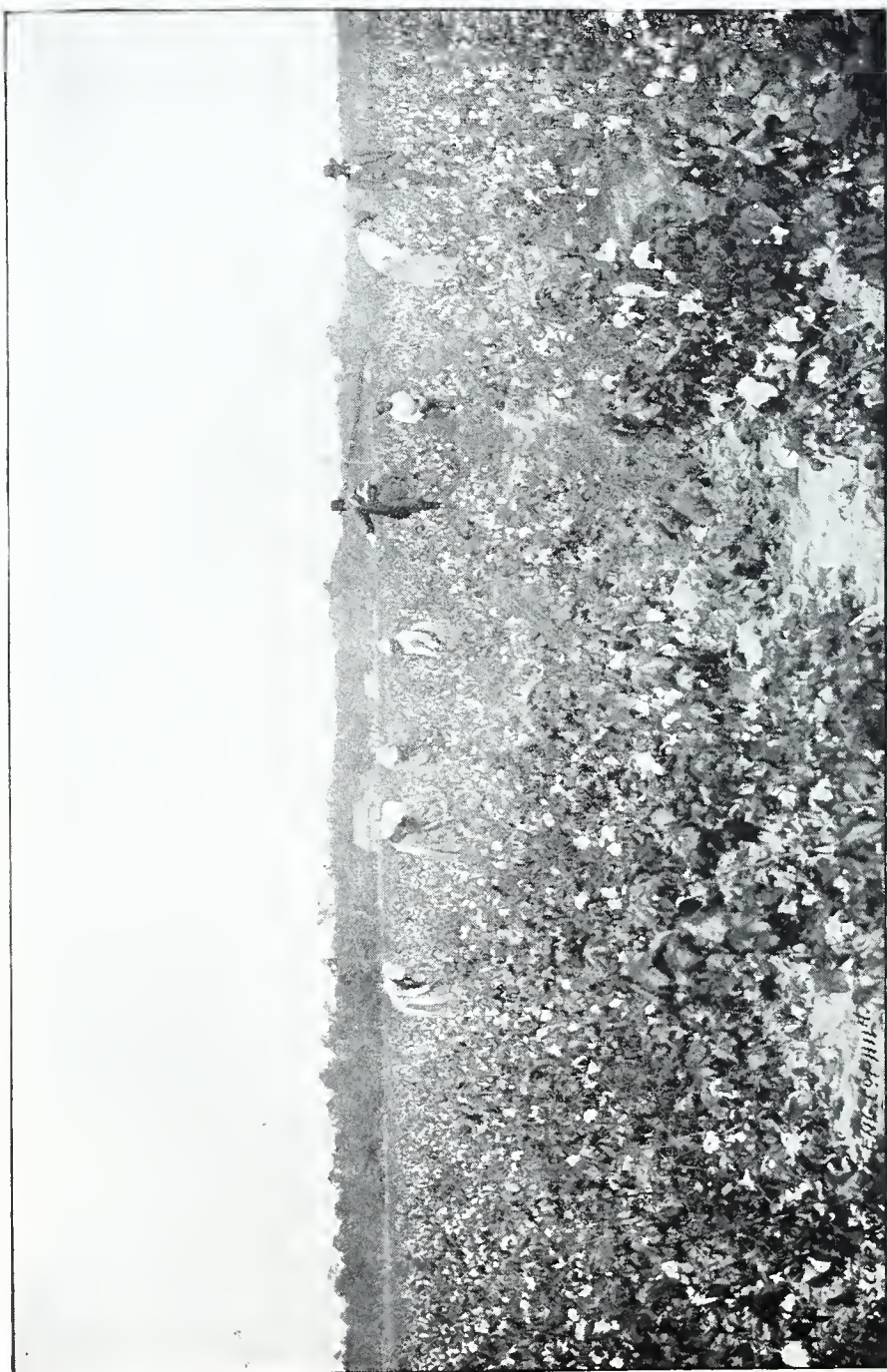
While the golden seed was accepted as the variety best adapted to the tide-water culture, the white seed was not without its friends, and found ready and wide application in damp lands in the interior, most often to be seen along the margins of small streams and swamps where moisture could be obtained and yet the necessity of flooding avoided. Indeed, experience has demonstrated that it can be grown on the same soil with corn and other grains, and may be seen in the eastern counties side by side with dry-land crops. A writer in *The Bulletin* of the North Carolina Department of Agriculture for April, 1892, says:

"Rice may be grown, but will not fruit well, on very light soils. It prefers moist loams and the lighter clays. The soils along our rivers, creeks and branches, mud bottoms, marsh lands when drained and not too much inclined to peat, and second lowlands, if not too stiff, are well adapted to it. It can be grown, and, sometimes, with favorable seasons, very successfully, on high, dry uplands of good quality, but its culture there is hardly to be recommended. There are many pond places on uplands that will not bring corn, but will bring very good rice and abundantly, too, particularly if cowpened or if cow-pen manure is used."

This proves the wide range to which the culture of the upland rice may be expanded, not only in the eastern section of the State, but the extremest western borders of the Piedmont country, if not into the mountains; for if the necessary inquiries were made, without question varieties might be discovered in the islands of the Pacific and Indian Oceans and the continent of Asia which would flourish in the soils and localities in this State. It is not open to conjecture to predict the success of upland rice in all the middle and most of the upper counties of the State, as illustrated by the fact that the census of 1880 showed that in 1879 the counties of Lincoln, Cleveland and Gaston, Caldwell, Burke and McDowell, far western, though cis-montane counties, produced 9,176 pounds; and the sea-bound and long-leaf pine region, omitting New Hanover and Brunswick Counties which produced the tide-water



ORTON RICE FARM, LOWER CAPE FEAR RIVER.



PICKING COTTON.

rice exclusively, had in cultivation 9,027 acres, and produced 4,156,075 pounds upland rice. New Hanover had 315 acres in cultivation and produced 260,068 pounds, and Brunswick 1,489 acres and 1,163,852 pounds. The census returns for 1889 have not yet given out its details in respect to all crops, but while there will be found little increase in the tide-water crop, it is believed that there will be material increase of upland culture.

This is not the place for description of methods of culture of either the upland or tide-water crops. That information must be obtained most appropriately elsewhere. But notice may be taken of certain obstacles in the way of successful upland culture, which with some have been urged as unsurmountable. These may be summed up, on the tediousness of the first working to clearing the young plant of grass, in tide-water culture effected by water, on the other by hand. This can only be overcome by patient labor with the consolation that when once done, it is done forever. The other is loss in handling the crop; and another, liability to failure from blast. Intelligence has found out methods to avoid the first on some crops charged with the same liability, and as to the other wheat, oats and other grains are subject to the same casually. In the introduction of new and untried crops men are apt to expect commendation for their liberal intelligence, and to expect from nature suspension of her laws in reward for their courage. Such expectations may be dismissed; but the remedy may be found by going back to the countries from which the white Madagascar rice came, and in after years, the golden seed. Something as good or better will be bound to reward the search.

COTTON.

The cotton crop of North Carolina bears important relation to the aggregate crop of the whole South, the more remarkable because her position as a cotton State has been somewhat reluctantly yielded by the more Southern States, because, perhaps, cotton has been with most of them almost the sole great staple, while with North Carolina it has been only a valuable incident, confirming what has been previously stated about the diversity and magnitude of the agricultural operations of the State. The fact that the different parts of the State were unable to apply themselves to the profitable crops, not all of them, before the war, chiefly dependent upon slave labor, and also the relatively high latitude, both *prima facie*, gave the State, in comparison with the exclusively cotton States, inferior importance. Yet, very slight investigation shows that while North Carolina was a large tobacco growing State, a wheat growing State, a corn growing State, a grass growing State, a cattle raising State, a hog raising State, with all of which out of her surplus she aided in supplying the necessities of others, and also a rice growing State, in which almost alone she encountered the competition of two of her cotton growing sisters, her contribution to the general cotton supply was always relatively great; relatively, because the culture of the plant was spread over a wide extent of her counties, with

wide areas of farms interposed between them devoted to other crops and cultivated by different labor.

No State could claim pre-eminence as a cotton State before the introduction of the spinning machines of Hargreaves and Arkwright, which made possible the rapid process of manufacture needed to supply rapidly growing wants; or before the invention of Whitney's cotton gin, which made also possible full supplies of the cotton wool prepared for the loom. No State could be a cotton State when the cotton plant was cultivated in little patches, and when the staple was picked out by the nimble fingers of the females of the family gathered in the evening around the "light-wood knot" fire, when the out-door duties of the farm were over. And until those inventions the lands that now form the cotton States had had no impulse to bring them out of the wilderness, because there was then no known crop that would compensate by its profits for the costs, the toils and the perils of converting the boundless forests into the subsequently equally boundless cotton fields. The two inventions in a very brief time changed all this, and the cotton States, made so by their marvellous adaptation by soil and climate, came into existence, most potent factors in shaping the great destiny of the United States.

By way of contrast, look back at the status of cotton before and subsequent to the inventions of Hargreaves and Arkwright, and of Whitney. The spinning machine was invented, or applied, in 1786; the gin in 1793. To go back some years before these inventions: in 1770 three bales of cotton were shipped from New York, ten bales from Charleston, four bales from Virginia and Maryland, and three barrels-full (!) from North Carolina. In 1793, the year of the invention of the cotton gin, the total shipments from the United States were 487,000 pounds; in 1803, ten years later, they had increased to 41,105,623.

There was no systematic attempt at crop reporting until 1825, when the crop of the previous year was first ascertained by the methods now, in the main, pursued; consequently, there is no accurate knowledge of what was done previous to that time. As a curious fact, it may be stated that the cotton-press had not come into use, and that until a comparatively recent time the loose cotton was thrown into a long bag closed at one end, and compressed into smaller compass by men or boys placed in the bag and stamping upon it until there was a weight of about 250 pounds attained; the mouth of the bag, whose whole length was about twelve feet, was then sewed up, and around each corner was passed a strong cord, which inclosed some of the cotton and formed four knobs by which the unwieldy mass was more conveniently handled. The returns made in 1825 for the crop of 1824 showed that North Carolina had been doing something—46,000 bales as compared with 134,518 for South Carolina for the same year; and for 1825 and 1826, 72,000 and 88,480 respectively for North Carolina, and 97,000 and 111,978 for the other; a continual gain for the one, a steady loss—at that period—for the other.

Subsequently, after 1826, the returns were made on the basis of shipments from the ports, one port in each State being selected as the typical port of such State. Wilmington speaks for North Carolina, and for

many years, with commendable strength of voice, though it must be admitted with steadily diminishing volume. Thus in 1826-7 112,811 bales were exported from that port. In 1830 the exports had fallen to 36,540, and in 1846-7 as low as 6,061 bales. This was not because of the decrease of production in North Carolina, but because new avenues of transportation had been provided. The construction of certain railroads had borne to Charleston much of what had been formerly taken to Wilmington, and other roads had created over-land transportation by which much of North Carolina cotton was taken direct to Northern ports or those of Virginia. The shipments from Wilmington were made in small coasting sailing vessels, and there was no foreign export whatever. In later years the extension of railroads as competitors with the cotton bearing lines, the erection of cotton compresses, the deepening of the water on the bar, and the marked increase of the depth of water, permitting the admission of large steamships to the wharves of the city, has not only restored its business, but increased it. The receipts for the season of 1890-1 were 187,000 bales, three-fourths of which were shipped to Europe in steamships, and for the season of 1891-2, the receipts have reached 160,000 bales.

The quality of the North Carolina cotton is as good as that of any of the cotton States where upland cotton is produced—in some counties, better. The crop of Orange County has never been a large one, even before the detachment from it of Durham County, rarely exceeding 3,000 bales annually. Yet its superiority, which is still maintained, was recognized three-quarters of a century ago; and it brought in the market half a cent more in the pound than corresponding grades from elsewhere. The same superiority was recognized in the county of Anson, where the crop has long been a relatively large one—from 10,000 to 15,000 annually; and “Anson creams” are still in large demand in the Liverpool market at advanced prices. It is another feature in the North Carolina cotton culture that less acreage is occupied in this State to the production of a bale of cotton than in the apparently more favored States south of it. In 1889-90, the yield was 0.44 of a bale to the acre, or 2.29 acres to the bale; in South Carolina, the same season, it was 0.38 of a bale to the acre, or 2.66 acres to the bale.

It is interesting to know how large a number of the counties in the State engage in the cotton culture, some of them, it is true, on a very diminutive scale. There are ninety-six counties in the State; of these all except the four mountain counties, Cherokee, Jackson, Madison and Mitchell, the middle counties of Person, Rockingham and Surry, and the coast county of Dare, are cotton producers, some on a very small scale, from one to five bales. The largest producer in the crop of 1889, as set forth in the Census Report for 1890, was Mecklenburg with a crop of 22,709 bales, followed by Wake with 19,392. The smallest crop was produced in Forsyth, Stokes and Watauga, each with one bale, and Caswell with two. The transmontane counties, usually regarded beyond the pale of the cotton belt, produced, Buncombe, five bales; Haywood, eight; Henderson, nineteen; Yancey, five. Clay, Graham, Macon and Transylvania are omitted in the tabulation. Their production, if any, was small.

THE CROP OF 1889.

The Census Bureau issues the following statement of the crop of 1889, which establishes the crop for that year at 336,245 bales, on an acreage of 1,147,206. In 1879 the crop was 389,588, on an acreage of 898,158—a decrease in the production of the last crop of 53,353 bales, on an increase of acreage of 254,051, due to unfavorable weather conditions:

<i>Counties.</i>	<i>Acres.</i>	<i>Bales.</i>
Alamance	614	210
Alexander	1,071	268
Anson	42,431	10,822
Beaufort	15,887	5,056
Bertie	21,561	5,512
Bladen	7,292	2,231
Brunswick	1,049	382
Buncombe	12	5
Burke	62	28
Cabarrus	21,294	7,102
Caldwell	160	38
Camden	4,155	1,240
Carteret	2,600	690
Caswell	4	2
Catawba	9,147	2,412
Chatham	18,518	5,062
Chowan	6,282	2,368
Cleveland	28,230	10,215
Columbus	7,656	2,340
Craven	11,059	2,619
Cumberland	17,243	5,248
Currituck	1,183	377
Davidson	2,371	756
Davie	2,061	415
Duplin	10,280	2,813
Durham	4,059	1,009
Edgecombe	53,453	13,483
Forsyth	1	1
Franklin	32,757	8,443
Gaston	18,033	6,620
Gates	8,601	2,216
Granville	2,803	982
Greene	22,133	7,388
Guilford	428	135
Halifax	45,567	8,485
Harnett	15,191	4,326
Haywood	31	8
Henderson	26	19
Hertford	15,059	5,185
Hyde	1,461	369
Iredell	17,849	4,863
Johnston	45,101	13,964
Jones	12,462	2,968
Lenoir	23,770	5,936
Lincoln	11,344	3,584
McDowell	22	6
Martin	20,275	5,048
Mecklenburg	61,808	22,709
Montgomery	7,311	1,467
Moore	11,534	2,998
Nash	31,402	8,571

<i>Counties.</i>	<i>Acres.</i>	<i>Bales.</i>
New Hanover	91	22
Northampton	33,792	6,587
Onslow	6,127	1,720
Orange	3,729	1,034
Pamlico	5,722	1,654
Pasquotank	4,299	1,150
Pender	2,026	567
Perquimans	7,569	2,236
Pitt	39,369	12,493
Polk	2,013	567
Randolph	2,101	628
Richmond	44,298	17,943
Robeson	45,393	16,204
Rowan	16,228	3,688
Rutherford	11,864	3,688
Sampson	19,123	5,290
Stanly	11,296	2,457
Surry	2	1
Tyrrell	2,709	450
Union	36,838	8,889
Vance	6,787	1,331
Wake	56,962	19,382
Warren	19,963	3,319
Washington	6,918	1,811
Watauga	5	1
Wayne	35,951	12,394
Wilkes	21	16
Wilson	33,285	11,129
Yadkin	22	5
Total	1,147,209	336,249

Jackson County is elsewhere unofficially credited with the product of three bales of cotton on four acres of ground. Part of its territory is south of the mountains, and part of it is as well adapted to cotton as the adjacent lands of South Carolina.

PEANUTS.

Mankind is influenced very often by very trivial causes, and human affairs shaped or modified by very insignificant agencies. It is not always the important that has deepest impression or control. With the gravest concerns is intermingled the warp of the most insignificant material, as well sustains the axiom that it is but a step from the sublime to the ridiculous, from the grave to the gay, from tragedy to side-splitting comedy. The part played by the peanut in statesmanship, and in the many phases of the drama, is undeniable in its importance, yet ludicrous in its application. Yet the affairs of the nation, or of States, would lose half their intensity of interest if the fervors of thought and the fires of eloquence were not fed by the constant crackling of peanut shells and the steady mastication of the liberated nut; and in the histrionic world tragedy would lose half its poignancy, and comedy half its zest, but for the constant accompaniment of the same providential stimulus. The peanut is now accepted as the national nut, indispensable to the working of the legislative brain, equally so as proper elaborator of theatrical humor and appreciation.

North Carolina had the honor of directly introducing this priceless

boon, directly in connection with the introduction of the African slave, very far removed from estimation as a boon. But the two came in together, the negro captive bringing along with him in the earlier days of the slave trade, before the sense of outraged humanity had enforced the horrors of the dreadful "middle passage," when the slave was transported as a passenger, with all the liberties of one, and before he was driven under hatches to conceal his presence as a contraband; bringing with him, among his household gods, his bene, his okra, and his peanuts, all indigenous African products. On the Carolina coast, both of the North and South States, these plants thrive with the luxuriance with which they flourished in their native soil and under their native sun; and long time ago, in both South and North Carolina, all these plants entered into the daily use of whites and negroes, and, for many years, without adoption by the other colonies. The bene plant has gone little outside of South Carolina; only of late years has the okra become of wider use, and even now not a universal favorite, or its uses well understood; and the peanut was slow in making national fame, and becoming conspicuous in legislative halls or in the galleries of theatres. Perhaps it is not more than three-quarters of a century ago that it burst its provincial bounds and went forth conquering and to conquer.

Arachis hypogæa, the botanical title, has many local names, ground pea, ground nut, peanut, pindar, goober, but is recognized and welcomed by any one of these names; for under whatever disguise, there is no concealment of its merits. The most extensive cultivation for purposes of export was on the coast of North Carolina, between the South Carolina line and Beaufort; and the most eligible soil was found upon the immediate coast in Onslow County, where the sandy loam of the soil has a large natural admixture of shell lime, and this section continues to be, in this State, the largest source of supply. The average yield is about thirty bushels to the acre, with an annual production of from 125,000 to 150,000 bushels, with a value of \$1.25, or less, per bushel; for increasing production elsewhere has had the usual effect of lowering values. At one time North Carolina had almost the monopoly of the domestic supply; but Tennessee and Virginia, especially the latter, now raise crops far in excess of those of North Carolina.

Wilmington is the chief market in this State for the home crop. In recent years machinery has been devised to separate the nuts from the tangle of roots and vines which once offered serious impediments to the enlargement of the crop; but little trouble now exists in the preparation of the crop for market.

Apart from its value as an edible nut, the peanut has high value as an oil producer. As an illuminator it has high value; as a lubricator it proves an excellent substitute for machine oil, having very little tendency to gum, and as a table oil it is so little inferior to olive oil that thousands of gallons of peanut oil have gone to Italy and made a return voyage to the United States to be welcomed by epicures and connoisseurs as the "right Florence." The oil cake is of the highest value for stock, and the plant has so many merits that its culture demands much wider extension.

THE PORTS AND HARBORS OF NORTH CAROLINA.

Along the coast of this State, extending from Back Bay, within the Virginia boundary, nearly to the South Carolina line, is a series of narrow barriers of land, interspersed with marshy, rush-covered flats, which seem to have been purposely interposed by nature between the tumultuous outside ocean and the placid expanses of water lying within; inland seas, with all the repose and safety of interior lakes, yet with some of the features of the outside coast lines, inasmuch as the eye sweeps sometimes over a boundless stretch of waters, enlivened with all the animation of the maritime landscape, the full-spread sails of the merchantman, the white wings of the fishing craft, or the trailing smoke of the swift flying steamer, until it rests far away upon the sandy beach and the thin fringe of shrubbery that forms the background. These inland waters, the Sounds, as they are known, are in themselves so smooth as to constitute safe harbors from the perils of the ocean, deep and navigable, but interrupted by shoals and bars, which effectually forbid within them the existence of commercial ports available for the purposes of distant commerce, but in the deep bays and estuaries providing ports for the vessels engaged in the coasting trade, a class of shipping at one time also having a large West India trade.

But, important as these inside bays and ports are and always will be, their importance must always be controlled by the access to them from the open sea, and which is imperatively dominated by the location and permanency of the inlets, and the depth of water upon their bars.

In the history of our coast there is nothing that presents itself as so unstable and capricious as these inlets, almost literally here to-day, there to-morrow. Once there were inlets into Currituck Sound, with good depth of water; now there are none—one closed in 1775, one in 1828. Opposite the eastern opening of Albemarle Sound was once an inlet; now occupied by dangerous Kitty Hawk and the fatal Killawil dunes. A little farther south, opposite Roanoke Island, was once the deep inlet of Nag's Head, through which the earliest English adventurers made their entrance and found a convenient landing-place on the shores of the famous island. That inlet has long been closed, and on the solid land which now fills its channel stands the hotel which forms the noted summer resort of "Nag's Head." Opposite the lower end of Roanoke Island opens Oregon Inlet, which for many years has provided safe entrance for vessels drawing ten to twelve feet of water into the waters of the sound. Thence down the coast, through the very thin line of "banks," are two or three unsteady, unsafe entrances, opening and closing at the will of the outside waters. Passing down the coast opens Hatteras Inlet, not far from the cape of that name; and this, with Currituck Inlet, forms the usual most reliable access to the inland waters of the great sounds, Pamlico and Albemarle.

Along these sounds, at various points deep and broad estuaries extend back to the mouths of large rivers, the Chowan, the Roanoke, the Tar, the Neuse, together with such streams as the Pasquotank, which in its relation to the artificial channel of the Dismal Swamp Canal, has given existence to one of the most thriving of these inland ports—Elizabeth City. Thus along these inland waters have grown up ports of importance, to be estimated more by their value in relation to domestic trade than to foreign commerce; for Washington and Newbern, both possessing fine harbors and easy access, are controlled by the limitations imposed by the depth of water in the inlets or on the shoals within the channels, so that the foreign trade once enjoyed by them, and carried on in a smaller class of vessels than now regarded as profitably adapted to foreign trade, is now practically suspended. But in their interior operations they are ports with a magnitude of business that emphasizes the prosperity of the sections of country tributary to them, and the waters of the sounds are enlivened with fleets bearing away the limitless variety of contributions to American commercial prosperity—cotton, lumber, shingles, naval stores, corn, the products of truck farming, etc.

Just under Cape Lookout opens, between Core and Bogue Sounds, and at the mouth of Newport River, the inlet which lets into Beaufort harbor. This is entered over a bar giving more water than any harbor on the coast, surpassed only by the entrance into the Chesapeake, and Port Royal harbor, in South Carolina. Vessels drawing twenty-three feet enter readily from the sea, and, in twenty minutes, are lying snugly at their anchorage or at their wharves. It is entered at all times, except against a north or north-west wind. It is a harbor of refuge in time of storm, from the enemy in time of war, a rendezvous chosen as the basis of naval operations, as, during the war of the Revolution, when the fleet destined for the attack on Charleston first concentrated here; when, in the war of 1812, captured prizes were brought in here for adjudication, and when, in the late war, the harbor was filled with the war vessels and transports of the Federal Government. The water within the harbor is sufficient for the largest merchant vessels, yet it is not a commercial port of value, for the reason that no great navigable stream brings to it the riches of the interior, and because the single line of railroad which reaches it has not yet been able to divert the current of traffic from its accustomed channel.

Down the coast, below Beaufort, several inlets open into the sounds at the mouths of tide-water rivers, such as White Oak and New River. But the water on their bars is shallow, and these bars so shifting as to forbid the expectation that they will ever add to the number, value or fame of our ports and harbors.

Between the island known as Smith's Island, at the southern extremity of which is the dreaded Cape Fear, the "*promontorium tremendum*" of DeBry's map, and the main land on the west, pours in the Cape Fear River, the only large river in the State—the only one, in fact, between the Hudson and the Savannah that makes directly into the ocean, for, before reaching it, all the others are swallowed in long and wide bays, estuaries or sounds. The Cape Fear, with its tributaries, drains an area



SUB-TROPICAL FLORA, EASTERN N. C.

of between 6,000 and 8,000 square miles of territory, and pours out a heavy volume into the sea. Here might be expected a harbor of easy entrance and ample capacity. Therefore we find a New England colony of adventurers seeking settlement and homes within its shelter in 1660, followed by a colony from Barbadoes in 1662-'63, and thenceforward continued occupation, founding of towns, opening up of plantations, enlargement of population and increase of wealth up to the present day. In early times the class of merchant vessels, or even of war vessels, was small and draft light, so that the question of depth of water on the bar and in the inner channels never seemed to have been presented. In all probability there never was occasion for it, for there was but a single entrance—that between Smith's and Oak Islands, and that secured sufficient water for all vessels using the harbor. But in 1761 a long-continued tempest cut through the banks between Smith's Island and what was long afterwards known as Federal Point, forming, until recently closed, what was known as New Inlet. The waters turned into this new channel in time attained a depth of water equal to that on the old or main bar, and eventually reduced the depth of water on that, in 1839, to about nine feet at low water, the New Inlet bar at the same time showing ten feet, and becoming the channel through which most of the coasting trade was conducted. This reduction in depth involved diminution in trade, and Wilmington was seriously menaced with the loss of its most valuable commerce. Therefore the State of North Carolina began the work of relief, continuing it from 1823 to 1828, when the General Government very properly assumed the duty and the cost. The operations for many years consisted of efforts to deepen and clear the channel of the river for some miles down by dredging, but chiefly by the construction of jetties, and after some year labor and a large expenditure of money, a gain of two or more feet in depth was effected. The work was suspended, and resumed in 1852, and directed to attempts to close the New Inlet by closing the entrance between Smith's and Zeke's Islands, and fair progress was made, when, in September, 1857, a great storm swept away nearly all that had been accomplished, and efforts were abandoned until 1870, when they were resumed with determined purpose and with large appropriations. This has been done until the breach between Smith's and Zeke's Islands was closed, and eventually the flow through New Inlet finally checked. This is not the place for the details of this important work, the present object being only to show by what methods the usefulness of the Cape Fear River, in its relation to material and domestic commerce, has been restored. This has been done by the erection of a solid dam more than a mile in length and with a breadth of from 90 to 125 feet, knit together by natural grass and oyster shells, until it is apparently impregnable to the assaults of the fiercest tempests. The effect on the depth of water on the main bar was not at once appreciable; but in two or three years, and assisted by the process of suction dredges, a great gain has been made, so that whereas in 1878, when the shortest soundings in the Bald Head Channel were nine feet, in 1882 they were fourteen feet, and now, in 1892, there is seventeen to eighteen feet at low water, which,

with an average rise of the tide of four and a half feet, gives a depth of from twenty-one and a half to twenty-two and a half feet. Last year a vessel drawing twenty-one and a half feet, coming in and going out, went over easily. In extraordinary spring tides there is a depth of twenty-four feet. The Government is now at work with purpose to deepen the water on the bar to twenty-six feet, or thirty, which is thought to be practicable. Doing this, a safe and deep harbor is found inside at Southport and thence up to Wilmington, with the gains already made, in a channel which affords, up to the wharves, a depth of from sixteen to twenty feet.

The importance of these improvements are already recognized nationally and in their relation to the business of Wilmington. The customs receipts have quadrupled; and as vessels of large tonnage can now cross the bar and come up to the city wharves for freight, the cotton receipts of the port have mounted up annually to nearly two hundred thousand bales, and they find shipment in a class of vessels which had never entered the port until the improvements in the channel were made—the freight steamships of from 1,200 to 1,800 tons burden.

The improvements which affect beneficially both Wilmington and Southport are none the less important to the latter than to the former. Southport has a capacious land-locked harbor, of great depth and free from dangerous shoals, and it becomes a safe harbor of refuge during storms, and in cases of disablement of vessels at sea by storm or other accident; and the benefits already accrued are ample compensation for the cost of the various work. The increased accessibility of the harbor also gives it great value as a coaling station, lying in the path of an enormous coasting and Gulf trade, and the first port that can be reached by vessels bound north who find themselves short of supplies. The coal will be largely supplied by the North Carolina mines.

Wilmington, or the Cape Fear River harbor, during the late war illustrated some peculiar features of value. With its ease of access it was also readily defensible. One of its fortifications successfully repelled the first assaults of one of the largest and strongest squadrons and the fiercest and most terrible bombardments known in naval annals. It did indeed succumb in the second and more formidable attempt; but not until after three or more years of effort to capture or to close the port were the blockading vessels, which alone kept the Southern States in communication with the outer world and kept up some semblance of trade, effectually excluded. It is stated that the number of blockaders, as they were called, those that ran the gauntlet and got in safely with their cargoes, was, from May 20, 1863, to December 31, 1864, about 260; prior to May 20, 1863, 15; and after December 31, 1864, 10, making a total of 285.

South, or rather west, running down the coast which at the mouth of the Cape Fear makes a course at right angles with its former direction, there are only two harbors, both of minor importance—Lockwood's Folly and Shallotte—with capacious and safe anchorage inside, but with little more than five feet water on the bar.

The following is of interest in a material point of view: "In 1875 a charter was granted by our State Legislature for a canal from the South Carolina line to Virginia with a view of avoiding the perils of the outside voyage past the dangerous capes on the coast. A survey was made by the United States Government during the same year, and the scheme was reported to be practicable, and that by utilizing forty-seven miles of the navigable north east branch of the Cape Fear River and other intermediate streams it would only require about forty miles of canal to connect Wilmington with Pamlico Sound and all the other inland water system of North Carolina, the Neuse, Tar, Roanoke and Chowan Rivers and the Pamlico and Albemarle Sounds into which they flow, and thence by the Dismal Swamp Canal and the Chesapeake and Albemarle Canal with the waters of Chesapeake Bay, and ultimately by natural and artificial water-ways already in use to make connection with the harbor of New York by an altogether inland route. And it was also ascertained that it only requires four miles of canal at Oak Island, at the mouth of the Cape Fear River, and five miles between Little River and Waccamaw River to connect the Cape Fear, Waccamaw, Pee Dee and Santee Rivers, thus extending the inland water route to Georgetown, Charleston and Savannah."

TRUCK FARMING.

An industry of so little consequence in the past as to have received little or no consideration in the view of the occupations and resources of the State, has, within a few years, grown to such magnitude as to rank among the foremost as a money resource, and to have solved, almost at one happy stroke, the problem presented to that important section of the State contiguous to the coast.

There the soil, the conditions of locality, and the habits of the people, encouraged neither diversity of crops nor of occupation. The fixed customs of generations had established an unbroken routine of field crops, of cotton, corn, potatoes and peas, the first only to be depended on as a money crop; outside of the field, the forest crops of timber, lumber and naval stores; and at a special and limited period of the year the products of the fisheries, which, while they brought food to many, brought money to few. The production of cotton was in excess of profitable demand, and the conditions of its cultivation more often wrought loss than profit. The forests were being exhausted, reducing the area of work and the abundance of supply; in large sections the abandonment of the industries connected with it, or their restriction to very narrow limits; and gloom and despondency unavoidably settled heavily upon the faces of those who looked into the darkening vista of the future.

The skies were suddenly, unexpectedly and most effectually cleared; hope cheered awakened effort; lands of hitherto despised consideration suddenly assumed an almost priceless value; the "little things" that the cotton planter had counted with contempt sprung to the head and ranked as leaders; restless industry and exhaustless energy brushed aside listless indolence and hopeless despondence, and great sections at once put on new life and gloried in the sunshine of a more than restored prosperity.

Many years ago the country around Norfolk, Va., was proven to be suitable for the early perfection of vegetables and small fruits, and with existing facilities for transportation a market in the Northern cities was always assured. Trucking early became the important industry of that section. When attention was directed to Florida, first as a health resort, then as the future land of the orange and other fruits, the increase of travel and the necessities of quick transportation enforced the introduction of swift steamships and the extension of railroad lines; and thus Florida first realized the advantage she possessed in a semi-tropical climate, in which the growth of vegetables was perpetual except during the scorching heats of summer, and where vegetables matured at the very period when, at the North, the tardy spring was still held in the icy grip of winter, and when the products of the garden would be welcomed with the more eagerness because of the long antecedent deprivation to which the consumers of vegetables had been subjected. Never was a greater blessing bestowed upon the



penned-up sufferers in the arid cities than the fresh, ripened, natural-flavored gifts of Florida. The cities were blessed, and Florida prospered. Georgia followed in the same happy venture, and so did South Carolina with equal success; and then portions of North Carolina began to test the probabilities of success here. There was no reason why she should fail. The soils all along the coast were almost identical, the localities that would be chosen as suitable not unlike in conditions; and, because the warm waters of the Gulf Stream washed the coasts of all, there could not be very serious dissimilarities in climate, only, that as the Gulf Stream flows gradually upwards in its northerly course, so do the waves of temperature progress northwardly in the same successive flood, imparting their heats in progressive fervor. Thus, while Florida would be the first where maturity was developed, so successively would Georgia, South Carolina and North Carolina, until Virginia was reached, make this welcome vernal offering. And this, in the course of experience, has proved to be invariable.

Perhaps the first large and successful tests of what in the beginning were rather timid trusts in the value of theories were made at Rocky Point, on the north-east branch of the Cape Fear River, in the present county of Pender, by Mr. G. Z. French, now postmaster at Wilmington. No injustice is designed, if he is named, when others not known to the writer be equal pioneers in the new industry. Success was attained in the very early production, in large quantity, of peas, cabbage, beans, potatoes, asparagus, squashes, cucumbers, melons, strawberries, etc., and the truck farm at Rocky Point is still a model and a prosperous one. As it is the purpose of this article to encourage by example, it falls within its province to give the following items of the operations of this year. Mr. French gives us the following items respecting the operations of the present season: The farm has 700 acres in truck, of which there were thirty acres in peas, seven in Irish potatoes, five in radishes, seven in beans, twenty in strawberries, two in bee's, and the rest in melons, cucumbers, turnips, field crops, etc.

Around Rocky Point there are 100 acres in strawberries. The *Wilmington Messenger* of June 18, 1892, makes the following statement respecting the strawberry crop of the Cape Fear section:

"Mr. A. S. Maynard, representing the California Fruit Transportation Company, who has been here two weeks, looking after the shipment of strawberries in the patent refrigerator cars of his company, will leave today, as the season is about over. He tells us that from Wilmington and points on the Wilmington and Weldon Railroad this season he has handled forty-five cars of berries. This means 300,000 quarts of strawberries, and the receipts in money to the growers aggregates the pretty sum of \$40,000."

The truck crops are intermediate between those of Charleston and Norfolk. They are shipped to the Northern market by quick freight trains.

Successful truck farming rapidly followed or accompanied the experiment at Rocky Point. Truck farms were established at Magnolia, Warsaw and Goldsboro, on the Wilmington and Weldon Railroad, and

to some extent at stations on that road farther north. At Goldsboro much attention was given to the cultivation of the strawberry. On the Atlantic and North Carolina road much trucking is done, mostly in the least perishable of early fruits and vegetables—strawberries, and potatoes, peas and beans. But the centre of the trucking interest is around Newbern, and, as that may be considered the typical illustration of the industry, somewhat full details are not only permissible but useful.

The main trucking area of the Newbern gardens lies between the Neuse and Trent Rivers, and occupies about 8,000 acres. The land is a dead level throughout nearly its whole extent except on the farms of Hackburn & Willett, where there is an outcrop of heavy clayey soil, forming a broken elongated ridge of several hundred yards in length with a breadth of two hundred yards, and covered with a heavy growth of large oaks, hickories, poplars, pines and other hard-wood trees. Everywhere else the land is level, much of it originally in swamp, and, when dry, with a soil of loose sandy loam. Drainage has now effaced all traces of swamp except along the drainage canals and on the banks of tide-water creeks, which reach back to considerable extent from the rivers on either side.

The whole of this area of 8,000 acres now presents the same appearance, the results of careful culture, nice tillage and intelligent farming. The soil, not naturally fertile, is readily responsive to fertilizers, and is kept up to a high standard by yearly liberal applications of manures, both domestic and commercial. The results are heavy annual crops of the many subjects of cultivation, diminished only by the casualties of untimely late frosts, from which even the mild coast section is not altogether exempt. The location of Newbern, with the advantages of both swift water and railroad transportation, admits the culture of a greater variety of vegetables than is largely attempted elsewhere.

The trucking business of Newbern is so great as to be a subject of State interest, and a detailed notice of its work will be no disparagement to other communities engaging in the same business, because, in the first place, from Newbern alone were full statistics attainable; and again, because the industry is pursued to greater extent there than elsewhere in the State; and again, because the success achieved there will stimulate other places possessing similar conditions of soil, locality and conveniences for transportation.

Of the season for 1891, Mr. W. H. Oliver makes the following statement, which was founded upon authentic data at the close of that season:

The present truck season, which is now about to close, has been an extraordinary one. The quantity of truck which has been produced has been enormous. In regard to the quantity, during the shipping season the railroad and two steamships have been taxed to the utmost of their capacity to move it. The railroad company has run from one to three trains daily, carrying from 3,000 to 4,000 barrels and boxes each train; the steamer Neuse has made three trips per week carrying from 4,000 to 4,500 barrels and boxes each trip; the steamer Newbern has made two trips each week carrying from 2,000 to 2,500 barrels and boxes each trip.

The railroad has shipped seventy train loads, say -----	210,000
The steamer Neuse has taken -----	80,000
The steamer Newbern has taken -----	60,000
	<hr/>
	350,000

boxes and barrels, consisting of strawberries, asparagus, green peas, cabbages, beans, kale, beets, turnips, Irish potatoes, tomatoes, cucumbers, egg plants, radishes, etc.

The prices realized for the above have been extraordinary, and the amount realized from the sales of them has by the most conservative estimate reached the sum of \$750,000; which has realized, after deducting freight and expenses, over \$500,000 to our farmers. The calculation is based upon the following:

There was shipped at least 100,000 barrels of Irish potatoes; some of these potatoes sold at \$7.00 per barrel, many at \$6.00, a large quantity at \$5.50 per barrel, doubtless realizing \$5.00 per barrel, which would make -----	\$500,000
Two hundred and fifty thousand barrels and boxes of other articles as above at \$1.00 each -----	250,000
	<hr/>
	\$750,000

The largest farms are conducted by Messrs. Hackburn & Willett, Joseph Rhein, W. F. Crockett, W. H. Gray, Grants & Cromwell, Graham Richardson, Weatherly & Carmon, Henry Caleb, ——— Hodges, William Dunn, E. R. Dudley, John S. McGowan, Watson & Daniels, and Joe Sweet. The farms of all these gentlemen are cultivated with the nicety of a garden, with methodical adaptation of means to ends, and with the most business-like relations to economy of management.

It is desirable to give an illustration of the truck business by some of its results. It is impossible, and it is not within the scope of this publication to go into specifications. Only one example is selected, because of the great extent of the farm and the variety of operations involved in its conduct.

From the farm of Hackburn & Willett were sold last year 9,000 barrels of potatoes for \$36,000; 100,000 head of cabbage for \$12,500; 2,000 bunches spinach for \$2,500; 2,000 boxes beans, \$2,000; 1,000 boxes peas, \$1,000; 5,000 bunches asparagus, \$16,000; radish crop, \$500; beets, \$400; 4,000 barrels citron melons, \$4,000; tomatoes, \$1,000; sales of milk, \$4,000; a total of \$65,000.

On the farm are 170 head of cattle of the best breeds, 66 horses and 139 hogs, a dairy, a saw-mill for the use of the box factory, a fertilizer factory, of which this farm uses 350 tons of its own manufacture.

For this year the information given is that there are 600 acres in truck and 300 in oats and grass. Of the vegetable crops were planted 200 acres in potatoes, 100 in cabbage, 50 in peas, 50 in beans, 50 in cucumbers, 50 in muskmelons, 10 in radishes, 10 in beets, 30 in asparagus, 25 in tomatoes, 15 in spinach. Seven hundred and fifty barrels of potatoes were planted.

The crops here mature fifteen days before those around Norfolk, and are intermediate between those of that section and those of Charleston.

To illustrate the extent of this year's operations, the following from a recent Newbern paper is quoted:

"Great quantities of truck are now leaving Newbern and the country near. One day the Atlantic and North Carolina Railroad carried about thirty car-loads, and the steamer *Neuse* took out 41,000 packages—23,000 barrels of potatoes and 18,000 boxes of beans. Saturday was a still greater shipping day. The steamer *Enola* took out 2,333 packages, and the railroad had, by fifty per cent., the largest shipment it has ever had in one day since the trucking began."

Since railroad connection has been established between Washington and the main stem of the Coast Line system, an astonishing impetus has been given to the trucking interests of that town, and the shipments this season of potatoes, cabbage, etc., have been very large.

Elizabeth City has long been a heavy grower of potatoes, making two crops annually, and, in general trucking systems, adopting the crops and methods in favor around Norfolk.

A business so new and already so extensive, a business which has found a value for lands hitherto unrecognized, which has given employment where enforced idleness prevailed, which has brought comfort and competency where distress had long existed, which has rewarded industry and energy with ample returns, which has vivified and enriched a sluggish and almost hopeless section, which has encouraged other sections to fall into the same footsteps, which has material influence upon the welfare of the whole State, is, it is to be hoped, justification for the space here given to its rise, progress and happy results.

SILK.

This valuable article, either in its culture or manufacture, cannot be regarded as a product or industry of this State. Why it is not either the one or the other, is a question that has not been satisfactorily answered. There is a silent reproach, in the absence of a silk industry among us, to the intelligence, the industry, the patience of the people of North Carolina. For many hundred years the vine, the olive and the silk-worm have been inextricably associated as the industrial types of highly refined people—the adornments, the luxuries, the fountains of wealth to the nations who had lifted themselves up above the pursuit of those coarser industrial avocations common alike to man just emerged from barbarism to man attaining the upper stratum of culture and civilization. Wine, oil, silk—the jewels in that diadem with which society has crowned itself as splendid testimony to its highest achievements in its long conflict with the coarse habits and grosser gratifications of the appetites or the tastes which have impeded man in his aim at refinement.

Why North Carolina has been so slow to adopt what nature had thrown in her way, and what practice had so long since proved to be feasible, is one of those questions which oftentimes may be asked with curiosity and surprise. It will be asked, for the time is coming, though it cannot be said to be at hand, when wine and silk, if not the olive oil (it may be our peanut oil), shall give to North Carolina the fame that now attaches to France and Italy. Nature planted the vine among us, from the very edges of the ocean beach to the valleys among our high mountains, with liberal and generous hand. She planted the mulberry with the same profusion, and she accompanied it with a robust native silkworm. But she gave both of them on the condition that the intelligence and the skill of man should, as in everything else adapted to human uses, be applied to their improvement. That the wild grape has been refined into the delicate Delaware, so should the rough, coarse native silkworm, with a more tender diet and a gentler care, be subdued to the refinement of the long-housed, long-coddled French and Italian worm, so long pampered as to have lapsed into infirmity and unable to perpetuate his kind. Recourse is annually had to China and Japan for eggs for every new crop, and France and Italy are no longer independent silk growers. And this is America's opportunity. As American grapes are free from disease, so are American silkworms, even those of European origin; and the United States might put herself in position to supply the necessities of Europe with healthy silkworm eggs if it were not her wiser policy to avail itself of the opportunity to establish her own silk industry and throw off a dependence which annually costs her more than fifty millions of dollars.

Silk and wine have proved the mainsprings of transatlantic national wealth; have been powerful agents in the spread of commerce, thereby adding largely to geographical knowledge. Both of these, or rather

the source of their supply, are so emphatically at home in North Carolina as to entitle them to be classed as indigenous. A wild silk-worm is the representative of its foreign cousin, and the native mulberry everywhere challenges to a trial of the silk industry. In truth the gauntlet was taken up, and that very long ago. Silk culture was the amusement of our grandmothers long before the Revolutionary war, and tradition tells of smoothly-woven and splendidly colored gowns made by these venerable dames, the pride of the households and the envy of their homespun-clad rivals; it also tells of consignments of raw silk and yarns and thread to the mother country, and the hope inspired in England that the means had been found to thwart the rivalry of her hereditary enemy, France. At a period long subsequent to the Revolution, and when the first bright anticipation had been falsified, there was a promised revival of hope. During the years 1830-2 there was active renewal of interest in silk culture; the silk-worm was in every household; a speedy fortune was in every hand. Silk was on every tongue and filled every waking thought and gilded every sleeping dream. Then came the *Morus Multicaulis* fever, wilder than the Dutch tulip mania of two centuries ago, and more ruinous, for it was not only disastrous to private fortune, but it blasted for many future years the vigor of the young industry. Speculation in *multicaulis* buds became the rage. Some at first made fortunes; thousands more were ruined; for *multicaulis* multiplied beyond any possible use, and could neither be sold or given away. The bubble burst, and collapsed more rapidly than it was blown up, and *multicaulis* and the silk-worm went down together in disgrace, amid the execrations of thousands of deceived enthusiasts. Rage seized the minds of the victims, and the innocent mulberry, though tenacious of life as the hated *Ailanthus*, was so ruthlessly extirpated that, some years since, when an effort was made, in conjunction with certain French experts, to revive the silk industry, sufficient surviving plants could nowhere be found in the State except in the town of Fayetteville, as unfortunate in the *multicaulis* speculation as it has been in so much else.

Mr. Edward Fasnach, of Raleigh, in 1876, made an intelligent and laborious effort to draw attention to this industry. He was a native of France, but long a resident of this country, and was convinced that North Carolina was naturally the land of silk and wine. He established near Raleigh a silk farm, and was so far successful as to have made some considerable shipments of cocoons to France. He abandoned his enterprise because, he says, the science of Pasteur had found and applied a remedy to the diseases of the silk-worm in France and Italy. How permanent that remedy is, is not known. It is certain that within the past few years the procurement of annual supplies of silk-worm eggs from China and Japan has been renewed.

At present the cultivation of silk in North Carolina has no existence. Some efforts by French adventurers to establish the industry in Cumberland and Richmond Counties were not sincere, and were abandoned, to the loss of those whose generous credulity had been taxed for the support of fraudulent enterprises.

The only suggestion of the silk industry at present known in North Carolina is the silk-mill at Wadesboro, operated by a firm from New Jersey, and a branch of one of the great silk-weaving establishments in that State. A large building in Wadesboro is occupied for that purpose, and appropriate machinery, operated by steam-power, is employed. There are 360 spindles and winders, 240 spindles and doublers, 160 spindles for spinning and 60 for unveiling. The product is trams, filling for silk-weaving, organzine and trams. The material used for conversion into threads and material used in making silk fabrics is Chinese and Japanese yarns. The output is about 1,500 pounds per month, which is forwarded to the parent mills in New Jersey. The enterprise has been so satisfactory as to have resulted this year in the doubling of the machinery.

The following suggestions and information may be of value:

Two hundred mulberry trees will grow very well on two acres of land. A good medium-sized tree will yield 150 pounds of leaves, which will give 30,000 pounds of leaves on two acres. As it takes seventeen pounds of leaves to make one pound of fresh cocoons, 30,000 pounds will give 1,765 pounds of fresh cocoons. The 1,765 pounds of fresh cocoons will make 588 pounds of dried cocoons. A ready market for these cocoons can be found in Philadelphia, through the medium of the Department of Agriculture. The expenses of cultivating two acres in trees, feeding the worms, etc., may be stated as follows:

1 grown person, first ten days.....	\$ 10
2 boys or girls, first ten days.....	6
3 grown persons, second ten days.....	20
5 boys or girls, second ten days.....	15
3 grown persons, third ten days.....	30
16 boys or girls, third ten days.....	38
	<hr/>
	\$129

If a few dollars for food is added, a few days' work for pruning and cultivating the trees, and a few sundries, it would cover all the expenses, which would not exceed \$160.

MINERAL SPRINGS OF NORTH CAROLINA.

Before the present facilities existed for rapid and comfortable transit from one portion of the State to the other, there was little interest manifested in the question of health or pleasure resorts within our borders. If such were to be found, they were not thought worthy to compare with the established fame of Saratoga or the Virginia Springs. Fashion had set her stamp on these, and they were resorted to, not so much for the recovery of health as to comply with the requisitions of the usages of fashionable society. A visit to Saratoga or the White Sulphur was as much *de rigueur* on the Southern people as the performance of the grand tour was in former days upon the fashionables of England.

There were two notable exceptions. The Warm Springs, now in Madison County, were once credited with substantial virtues, and rheumatic old gentlemen annually submitted to the torments of the long jolting ride of hundreds of miles, in all the unalleviable discomforts of their old-fashioned gigs, with the hope that the thermal baths would make them lithe and blithe again, with the certain assurance that no luxuriance of the table and no delicacy of their room equipments would counteract the good effects of the waters. Then, at the other end of the State, were good old Shocco Springs, not to be named because their waters were ever of any possible service, but memorable for the genuine pleasure they brought as the resort of a somewhat unsophisticated style and fashion, emphasized by gay equipage and splendid dresses, but tolerant of plainness, only exacting of good manners and decorous behavior, unmindful of the rigors of etiquette, welcoming each other in contempt of letters or forms of introduction, in all the exuberance of trustful good nature, all under the impulse of the common purpose to find the reward of their visit in the full enjoyment of sociability, hilarity and the inspiring music of old Frank Johnson and his homespun band. Shocco is now unknown to this generation. The tide of travel and of fashion has passed by it and left it high and dry, a sad memento of unsubstantial claim to fame. Warm Springs, on the other hand, has expanded into Hot Springs, splendid in its buildings and equipments, the favored subject of large investments of capital, the seat of fashion for Northern and North-western visitors, more indebted to them for its present brilliant reputation than to home appreciation, but giving to North Carolina abroad a position among health and pleasure resorts, long withheld because of long years of almost inaccessible seclusion in the narrow gorges of the French Broad River. Shocco shrunk into insignificance and disuse, partly from the calamities of war, but permanently because it was remote from the railroad, without which there was no recuperation. Warm Springs, on the other hand, expanded into Hot Springs by virtue of easy accessibility from all directions given by railroad facilities, which embraced the whole continent; and then the marvellous and exceptional presence of water flowing, hot, in perennial stream from the depths of the earth, the fine mountain surround-

ings, the broad boisterous river, and the new juxtaposition of the choicest achievements of luxury and comfort to the simplest forms and methods of the unsophisticated wilderness—all these, rather than the superior virtues of its waters, have established for Hot Springs, almost alone among the mineral springs of North Carolina, a notoriety extended far beyond its territorial limits.

The railroad development has been the chief agent in bringing to general knowledge and use the many valuable springs and pleasant resorts, which now make altogether needless those tedious and costly visits to the resorts of other States. Some few, indeed, like the Buffalo Springs, in Mecklenburg County, Virginia, retain their hold upon habit and confidence, near our borders, with the simple usages to which we are habituated and with intrinsic virtues to which willing tribute is annually paid by hundreds of trustful devotees. There were found all over North Carolina, in localities widely separated from each other, springs of local fame, and even more than that; for far-away invalids painfully made their way to them, and many there were who might say, when they quaffed the healing waters, that they “took up their beds and walked.” It is not therefore surprising that, when our constantly expanding railroad system reached places once difficult of approach, their solid yet once half-concealed virtues were recalled, brought now into prominence, and make them the trusted, favored and fashionable places some of them now are.

It is proposed to speak of some of them, necessarily somewhat briefly, but fully enough to give a general conception of the character of the waters and the nature of the surrounding country. The selection of examples is made without reference to the superiority of one over another, but with the purpose of showing how profusely nature has distributed her curative waters, and how impartially she has made the east to show with the west, and how bountifully the Middle Section, equally with the others, has been provided.

Among the early well-known springs in the west were the Wilson Springs, once in Lincoln County before its division, now in Cleveland, near Shelby, and known now as the

CLEVELAND SPRINGS.

These are about two miles from Shelby, which place is reached both by the Carolina Central and the Three C's roads, and are situated in a region of grandly rolling hills, cut with deep broad vales, and largely covered with native forest. The general elevation of the country is about 1,000 feet above sea-level, near enough to the mountains to give commanding views of the Blue Ridge, the South Mountains, King's, Crowder's and other ranges—a country altogether picturesque and beautiful, and blessed with healthful elastic air. The hotel accommodations are ample and agreeable in all particulars, and the resort to these springs is very large. The springs are many and of varied character, the waters flowing in large volume. In the midst of its verdant hills and shady groves flow waters from a dozen springs, each one con-

taining mineral qualities varying in their combinations and effects to such a degree that for the treatment of certain diseases the White Sulphur is the panacea; for some others the Red Sulphur and Iodine are required; for others the Chalybeate is best suited, whilst for others the best results are obtained by drinking the waters of several alternately. The ailments which seem to be mostly under the control of these waters are dyspepsia, rheumatism, malarial troubles, insomnia, etc.

The following is the analysis of two of the springs of marked merit:

WHITE SULPHUR SPRINGS.—One gallon of water contains 4.80 inches sulphuretted hydrogen gas and carbonate acid, 4.50 grains carbonate of lime, 18.70 grains sulphate of lime, 4.80 grains muriate of lime, 7.65 grains muriate of magnesia.

IODINE OR RED SULPHUR SPRINGS.—One gallon of water contains 4.22 cubic inches sulphuretted hydrogen gas and carbonate acid, 3.12 grains carbonate of lime, 17.42 grains sulphate of lime, iodine and magnesia.

THE SPARKLING CATAWBA SPRINGS

Are in Catawba County, about eight miles north of Hickory, on the Western North Carolina Railroad, and are reached from Hickory by a remarkably smooth and level road. The surrounding country is a beautiful one, partly wooded, partly in cultivation, and with scenic surroundings of great beauty, with the Brushy Mountains in the foreground on the north, and fine views of the Blue Ridge in the distance. The hotel accommodations are very full, and the Springs have maintained good repute for excellence of fare. The waters of the Springs embrace blue and white sulphur, and chalybeate, and, from the known benefit derived by well-attested cures in their use as an alterative and tonic influence over the lymphatic and secretive glands, they are unsurpassed, and never fail to strengthen the gastric juices of the stomach, and increase the appetite, assist the digestion and promote the assimilation of food, thereby imparting tone and health to the person. By the use of these mineral waters, diseases of the liver, dyspepsia, vertigo, neuralgia, ophthalmia or sore eyes, paralysis, spinal affections, rheumatism, scrofula, gravel, diabetes, kidney and urinary diseases, are greatly relieved.

CONNELLY SPRINGS,

Midway between Morganton and Hickory, on the Western North Carolina Railroad, have become a favorite summer resort, partly owing to the curative virtues of the sulphur water and also to the good hotel and readiness of access to the place. The elevation secures pleasant summer temperature, and the proximity of the Blue Ridge on the north and the South Mountains on the south-west assure the charm of fine though somewhat remote mountain scenery.

BARIUM SPRING,

In Iredell County, has excited much interest, and will eventually become a very popular health resort. This Spring was discovered about 1775. It was formerly known as the "Poison Spring," so called under a mis-

taken idea of the early settlers, who, because cattle refused to drink the water, were led to believe that it was injurious. Experience and chemistry, however, have disproved and entirely reversed this supposition, and the water is known now to be a valuable remedy for many diseases. The analyses of Professors Chandler, Ledoux and Phillips show that it contains, in varying proportions, barium, chloride and sulphate, iron, soda, sulphur, magnesia and phosphoric acid, in such combinations as to render it a curative and tonic agent, the equal of any mineral water known. It has no visible outflow, and the water remains at a constant level, never freezes, never stagnates, and it will keep pure and retain its curative efficiency indefinitely. These remarkable Springs were well known to the Indians, and their waters were so highly esteemed by them for their potent curative properties that they made the locality a regular rendezvous, as is proven by tradition and by numerous evidences of their former occupation. The other springs all contain varying mineral ingredients, sulphur and iron being the most prominent elements in them.

THE MOORE SPRING,

In Stokes County, not far from Danbury, remarkable for its control over cutaneous affections and impurity of the blood, is worthy of note, though not a resort, from the unusual presence of many mineral ingredients, to such extent as to have astonished the State Chemist, who makes the following analysis:

Potassium sulphate, 0.210 grains; sodium chloride, 2.957 grains; sodium sulphate, 0.778 grains; sodium phosphate, 0.542 grains; calcium carbonate, 61.436 grains; magnesium carbonate, 1.058 grains; silica, 1.308 grains; volatile and organic matter and loss, * 40.136; total, 108.425. Oxide of iron alumina, trace.

Greensboro has within its limits valuable mineral springs.

The Winston Marienbad waters are drawing much intelligent attention. The following is a brief extract from a newspaper account of them:

"In the spring discovered by Mr. S. A. Hauser on his place, two and a half miles north-west of Winston, our community has gained one of the most valuable acquisitions conceivable. According to Dr. Battle's analysis, this water contains calcium carbonate, magnesium carbonate, iron oxide, sodium chloride, and potassium sulphate. The water is very similar to that of Marienbad, the famous Bohemian Spa. The Marienbad waters contain calcium carbonate, magnesium carbonate, ferrous carbonate, sodium chloride, lithium carbonate, and trace of strontium, manganese, silica, etc. The analogy between the Marienbad waters and ours is very close, for, while ours has no lithium, yet it has potassium, which is even a better ingredient and possesses all the other effective elements of the Marienbad."

THE PIEDMONT SPRINGS,

In Stokes County, not far from Danbury, have high repute, and, there being a large and good hotel on the premises, it is largely resorted to.

* Including undetermined matter.

It is twelve miles from either the Cape Fear and Yadkin Valley road or the Roanoke and Southern branch of the Norfolk and Western.

ELLERBEE SPRINGS.

Among the best locally valued springs in this State is one above named, situated about twelve miles north of Rockingham, Richmond County, through which passes the Carolina Central Railroad. The Springs are in a dry, healthy, sand-hill region. The waters have a remarkably abundant flow, the predominant elements being iron and sulphur. No analysis is attainable, but the Springs are worthy of mention, because in them is found a remedy for that stubborn, distressing malady, hay fever. Over that its immediate control seems to be supreme, no instance of failure to cure being known, though so far patients under that ailment are few.

Jackson Springs, Mount Vernon Springs and others have fine local character, and worthily attract large annual resort; but it is impossible to give the characteristics of all in detail. The Lincoln Lithia, at Lincolnnton, is among those whose waters are valued abroad and largely distributed.

In the eastern part of the Middle Section of the State are

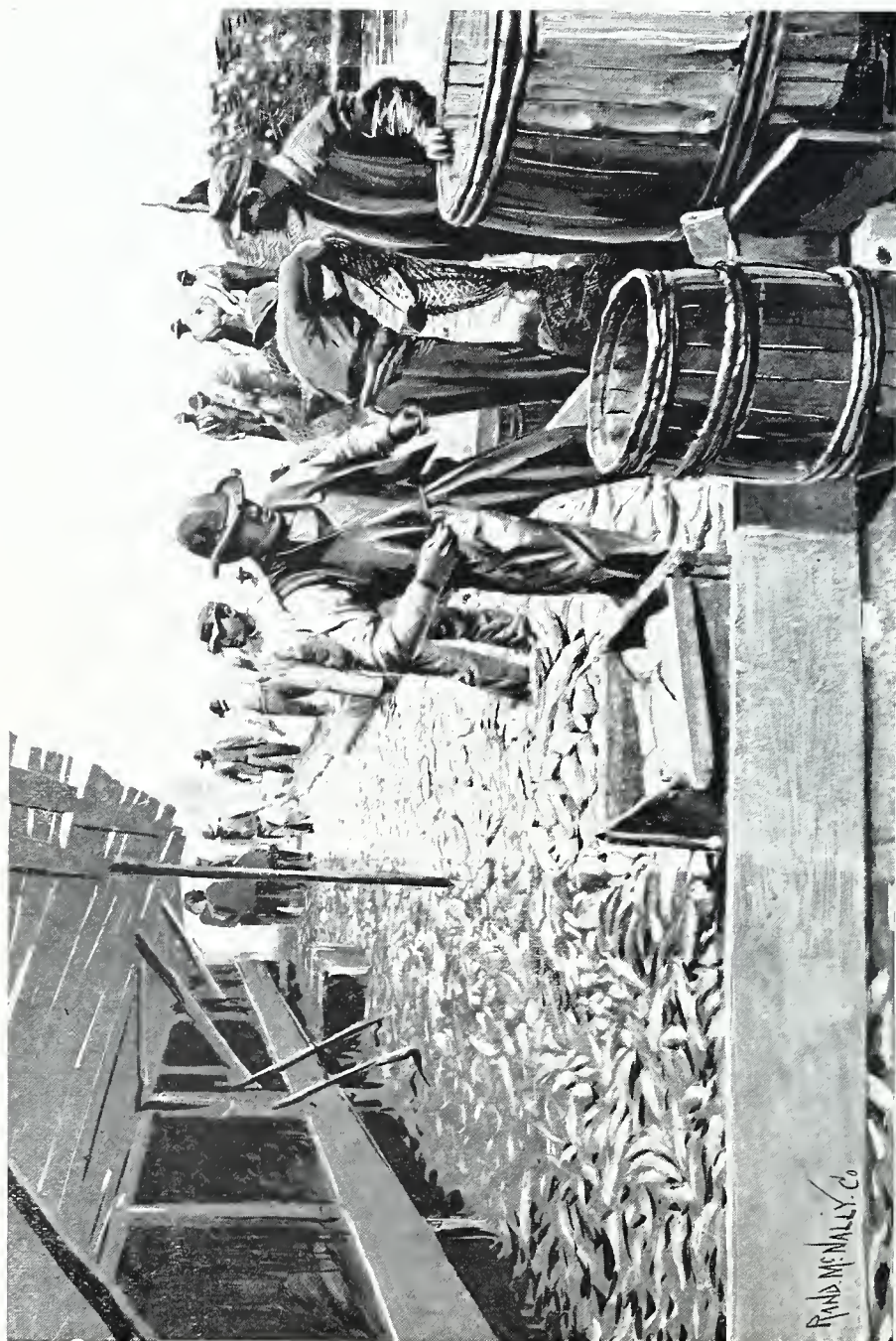
THE PANACEA SPRINGS,

Near Littleton, N. C., on the Raleigh and Gaston branch of the Seaboard system, and about seventy miles north of Raleigh. These Springs are in a pretty valley among the rolling hills of an unexpectedly picturesque country, its rocks and its thick forests of oak, hickory and other fine timber trees giving token of healthy airs and life-giving waters. The waters have only become widely known within the past few years, but have already acquired fame at home and abroad. The claims for efficacy in many maladies are very extensive, but appear to be well sustained. For dyspepsia they are said to be very beneficial; also for chronic diarrhoea, scrofula, kidney troubles and other diseases. The waters lose none of their virtues by transportation, and are sold by the drug-stores throughout the State. There is a good hotel on the premises.

One of the most remarkable series of springs in the State are known as

THE SEVEN SPRINGS.

They are as remarkable for their locality and the nature of their surroundings as for their genuine virtues. They are in the south-east corner of Wayne County, eighteen miles from both Kinston and Goldsboro, but most readily and quickly reached from LaGrange, on the Atlantic and North Carolina Railroad, seven miles north of the springs. The springs lie almost immediately on the banks of the Neuse River, in a region of hills and bluffs, and amid forests of hard-wood trees, giving a very marked up-country feature by their intrusion into the



LANDING FISH AT AVOCA BEACH.

flat lands and monotonous forest of the low country. The springs, as their title implies, are seven in number, all bubbling up in clear, strong volume, in close contiguity and enclosed and encased in a spring-house of remarkably limited though absolutely convenient dimensions. The waters are as different in their qualities as they are in their numbers, and prove effective in malarial diseases, indigestion, insomnia, kidney troubles, including Bright's disease, weakness and inflammation of the eyes, loss of appetite, etc. These springs have been known for many years, and have been the resort of the surrounding country, but only comparatively recently have they become known to the more distant public. A good and capacious hotel now makes it practicable to distribute their benefits among a much larger circle of health-seekers.

There are many other springs of value throughout North Carolina than those above named. All of them are now accessible by railroad. Therefore there is no need for a North Carolinian to go abroad to repair his injured health, and there is good reason why the invalid of other States should seek our health-giving waters.

A spring and resort, omitted in its proper place, must not be neglected. These are the

GLEN ALPINE SPRINGS,

Eleven miles from Morganton, and reached from Glen Alpine station, on the Western North Carolina Railroad. They are beautifully situated among the South Mountains, a range, if not so lofty, quite as bold and picturesque as the Blue Ridge—a delightful resort, with woods, and mountains, and valleys, and gorges, and tumbling waterfalls, and a good hotel, and what is sought for by the invalid—invaluable mineral springs. These are chiefly lithia waters. The following is an analysis of Glen Alpine Springs water by H. B. Battle, State Chemist:

One U. S. gallon contained solids: Potassium sulphate, .212 grains; sodium sulphate, .360 grains; sodium chloride, .619 grains; calcium carbonate, 2.940 grains; magnesium carbonate, .631 grains; silica, .069 grains; oxide of alumina, .742 grains; *oxide of iron, .731 grains; volatile and organic matter and loss, 1.779 grains; total, 8.083 grains.

FISHERIES.

The fisheries of North Carolina are of vastly more importance than is attached to them by the people of the interior, and by those who legislate for the interests of the whole State, else there would not have been that premature extinguishment of that enlightened measure, the Fish Commission, which was doing so much to restore to the waters of North Carolina, inland as well as exterior, that amazing store of food fish which once so bountifully and so gratefully contributed to the table supplies of the people from the coast up to the very foot of the mountains. It was the comment of the early explorers and settlers that the waters of the country now forming the State of North Carolina were so

* Equivalent to carbonate of iron, 1.052.

stocked with fish as to pleasantly solve, without an argument, the question of subsistence, and that in the season of migration the rivers were so thronged with the crowding swarms struggling for pass-way up to their heads as to suffocate each other by their pressure. This is probably exuberant exaggeration; but it is certain that at a period even now remembered by the living the visitations of the shad in bountiful runs was annually awaited along the Cape Fear, the Neuse, the Tar, the Roanoke, the Yadkin and the Catawba, up to their very sources; shad being taken in large quantities in the Yadkin far above Salisbury, in the Catawba above Morganton, in the Neuse above Raleigh, and in such abundance as to be sold at prices that now appear to have been absurdly small. The usual results of improvidence, of greediness, of needless waste, of selfish obstructions, followed; and, while straggling individuals, or even diminished schools, sometimes essay the pathway of ancestral swarms, the fact remains that the fish resource is on the coast or in the estuaries or mouths of the rivers which once opened to invite to far interior exploration.

On the coast, however, there yet exists an important industry in the fisheries, the most important on the South Atlantic coast. The fish with the greatest commercial value are shad, herring, mullet, bluefish, menhaden, sturgeon, rock-bass, Spanish mackerel and others of inferior importance.

The following table of statistics, though not of very recent date, will give an approximate idea of the importance of the North Carolina fisheries. Owing to the very great recent development in the practice of sending fresh fish on ice to the Northern cities and through the interior of this State, there is unquestionably a large increase, both in the quantity and value of fish taken:

Persons employed	5,274
Fishing vessels	95
Fishing boats	2,714
Capital dependent on the fishery industries	\$506,561
Pounds of sea products taken (including oysters)	11,357,300
Value of same	\$280,745
Pounds of river products taken	20,892,188
Value of same	\$546,950
Total value of products to the fishermen	\$827,695

There is a distribution of the business of the fisheries very clearly defined by localities, and also largely by the character and value of the subjects of the catch. These localities will be considered briefly, as follows:

THE CAPE FEAR FISHERIES,

Which include all from Federal Point at the mouth of the Cape Fear River to New River, the proceeds of which nearly all find a market in Wilmington. The most important fish, in quantity, is the mullet, which is caught, salted and barreled to the amount of from 8,000 to 10,000 barrels annually. The season for mullets is during the months of August, September, October and November. The fish are caught in seines, at some points, as at Zeke's Island, outside the bars; and most

generally, where the condition of the sea admits, in the open outside waters.

The season for shad is in February, March and April. They are caught in seines, drift nets and dip nets. They are largely sent fresh on ice to the Northern markets, and are in great demand, both on account of intrinsic merit and of their early appearance in the market.

The sturgeon, of recent years, has become valuable, not for home consumption, but to meet a Northern demand which is steadily increasing. They are caught in the Cape Fear River to the amount of about 100,000 pounds annually, and are at once shipped by rail, on ice.

In this connection it may be interesting to give the list made by that very close observer and early historian of North Carolina, Lawson, who, in 1714, tells us what kind of fish frequent our coasts, as follows:

Whales, several sorts; thrashers, devilfish, swordfish, crampois, bottle noses, porpoises, sharks—two sorts; dogfish, Spanish mackerel, cavallies, bonitos, bluefish, drum, red and black; angel-fish, bass or rockfish, sheephead, plaice, flounder, soles, mullets, shad, fat backs, guard—white and green; scate or sting-ray, thorn-back, conger eels, lamprey eels, sunfish, toadfish, tench, salt-water trout, croakers, herring, smelts, breams, tailors; and an infinity of fresh-water fish, and also all the varieties of shellfish.

The same fish are still found, and there are very few changes in the names.

BEAUFORT AND MOREHEAD FISHERIES

Embrace an area of more than eighty miles in length, extending from Portsmouth near Ocracoke Inlet on the north-east to Bogue Sound on the south-west, embracing the inside waters of the sounds and bays, and the outside waters under Cape Lookout. The varieties include many of those named in Lawson's enumeration, excluding the shad, which seeks the sources of fresh-water rivers. The bluefish, one of the most numerous, make their appearance in large schools twice in the year. They come in from the sea between the 15th of April and the 1st of May and are caught until June. They are then migrating northwardly. They are caught off Lookout through the whole summer. They are caught again in the fall, beginning about the 1st of August. With them are caught the sea trout, Spanish mackerel, spots, croakers, and other migrating fish. This migration beginning early in August, continues until about the middle of November. The mullet appears in immense schools about the middle of August and runs until about the middle of November, during which time they are very fat and in good demand. About one-half are shipped fresh on ice, and the other half is salted to the extent of from 8,000 to 10,000 barrels annually. In Beaufort Harbor and other protected waters they are caught with gill nets; outside they are caught with seines. Recently the practice of deep-sea fishing has been resorted to with remarkable success, nets being dropped, properly weighted, to the depth of eighty to one hundred feet, and drawn up filled to bursting with varieties of marketable fish. Among the marketable fish caught are pompano, trout, Spanish mackerel, croakers, spots, and others, and all in immense and unfailing quantities.

About 1,000 men are here employed, working 400 boats. Eighty boats are employed outside the bar, fishing with seines, or with hook and line. All the fresh fish are shipped on ice by rail, by way of Newbern, from which place they go either by rail to destination, or by steamer to Elizabeth City. The shippers prepay annually about \$15,000 in freight on their fresh-fish shipments.

Beaufort Harbor has for many years been the centre of a whale fishery, the whale seeking the cool arctic current which runs down the coast under Lookout as far down as Cape Fear, there finding the food they delight in. Once the whale was so numerous as to invite to this coast for their capture the whalers of New England. Now they appear only at intervals, some times six or eight during the year, sometimes none at all. But preparations for their capture are always in readiness. The whalers live along the shore, with their boats, harpoons, bombs and lines always in readiness; and as soon as a whale is sighted all respond to a general signal and engage in pursuit, and the victim rarely escapes. The skeleton now on the floor of the State Geological Museum at Raleigh, is that of a whale captured off Beaufort about 1876. It is 65 feet in length.

NEWBERN,

At the head of the broad estuary of the Neuse River, is rather a fish market than a fishing place. It derives, in relation to the fisheries, its importance as being the *entrepot* and point of shipment for the catch of the adjacent waters. About two million herrings are caught in the waters of the Neuse, which are sought as suitable spawning ground, running into, and soon filling up, the smallest streams. The herring begins to run about the 1st of March, and the height of the season is reached in about a month. About half of the catch is shipped or consumed fresh, and the rest is salted. Shad appear early in January, increase in numbers during February, and are in their greatest plenty and perfection about the middle of March. They are caught in seines, gill and skim nets. The Newbern shad command a higher price than obtained for others, both on account of size and quality. There are five principal dealers in Newbern, and their business, in conjunction with that of Morehead, exceeds half a million of dollars a year. The fresh-water fisheries of Newbern are very important, continued through the year. The fish, principally perch, chub and pickerel, are caught in the numerous creeks with hooks, drag and gill nets, and contribute largely to the fish supply of the interior.

Washington, on the Pamlico River at the head of the estuary which receives the waters of Tar River, offers fine inducements to the run of both shad and herring, and great quantities of both are caught; and with the completion of the branch of the W. & W. road to this point, every facility is offered to the quick transportation to destination of fresh fish on ice.

The whole of the eastern water section is engaged in this industry. The demands upon which, which are yearly increasing, seem to have been fully met by the successful work of the Fish Commission, and made

manifest by the increasing numbers and quality of the cultivated and protected fish, and then brought to an untimely end, the act for the creation of the Fish Commission having been repealed prematurely. Other States who adopted the system of fish culture have been wiser than we, and persevere. It is to be hoped that wisdom will return to our Legislature and the act be renewed.

The most extensive and profitable of the fisheries lie along Albemarle Sound and its tributary waters.

The following in relation to them, and which gives ample information, is quoted from "The Albemarle Section," a pamphlet compiled by Messrs. F. E. and Frank Vaughan, of Elizabeth City:

The fisheries of North Carolina are the most important on the South Atlantic coast. The shad and herring fisheries are the most extensive and important of any State, and the fisheries of the Albemarle section of North Carolina are larger and the products more valuable than those of the balance of the State combined. Especially is this true of the seine fisheries. It is estimated that 300,000 yards of seine are operated in the Albemarle Sounds. In addition, there are thousands of stake, drift, pound and other kinds of nets operated in the great sounds and rivers in this section. The largest of the seines are some 2,500 yards in length—about a mile and a half. From end to end of the hauling ropes, when the seine is out, the distance is nearly four miles. The seines are "shot"—that is, carried out and deposited in the water—by steam flats, and steam-power is also used in bringing them to shore with their great loads of fish. Formerly the "shooting" was all done by means of boats manned by from sixteen to twenty-four sturdy oarsmen, but the inventive genius of a citizen of the Albemarle section opened the way to better and more rapid methods. To Capt. Peter Warren, of Edenton, is due all the credit for that great modern convenience of the large fisheries, known as the steam flat. The varieties of valuable fishes frequenting the waters of the Albemarle section in great numbers are numerous. Chief among the commercial fishes are herring, shad, rock (striped bass), mullet, bluefish, Spanish mackerel, chub (black bass), perch, sturgeon, menhaden, trout, spots, hogfish, croakers, and of the shellfish, oysters and clams. The crab, so abundant in many places, is the arch enemy of the gill-netter, having no respect for either the nets or its finny captives, and destroying both with apparently equal relish. Even this Ishmaelite of the waters is sought for profit, being prepared for market at Hampton, Va., and other places on the coast. The herring, as he is universally called, in reality an ale-wife, is entitled to the distinction of king of our commercial fishes—not that his flavor is so fine as of dozens of other varieties, or that he brings even a hundredth part of what other fish sometimes bring, but because he never fails to come, be the season good or bad. From fifty to a hundred thousand herrings, and often twice that number, are frequently taken at a single haul of a large seine in a good season. It is reliably stated that as many as 400,000 herrings have been saved from a single haul of a seine in Albemarle Sound, thousands of fish escaping and being thrown away for want of handling facilities. Herring are cured in salt and stored in barrels and kegs. Three grades of them are prepared for market—cut, roe and gross. They are also cured by smoking, though on a much smaller scale. The other most valuable species of food fish taken in the Albemarle waters are shad and rock, caught in great numbers in Albemarle Sound and its tributary streams, and to a less extent in the Pamlico Sound and its tributaries. These fish (and others, as perch, chubs, etc.) are packed in ice and shipped fresh. The North Carolina shad command the highest prices, because they begin to "run" first and are early on the market. Thus, while the State of Maryland is credited by the census with a slightly larger catch of shad, the price realized for the North Carolina shad is so much greater that the value of the catch is more than double that of the Maryland fishery, because the shad are marketed before fishing begins there. The quantity of shad taken in the waters of this section in a good year is between three and four million of pounds. The shad is a much more timid fish than the herring, and not so easily entrapped. At the head of the Albemarle Sound, made fresh by the volume of water from the Roanoke, Cashie, Chowan and other rivers, is the favorite spawning grounds of the shad, and it is in their passage hither that they are ensnared in the seines and nets all through the sounds and rivers. At Avoca, at the head of Albemarle Sound, was a hatchery for shad, furnished with the most approved

appliances. It was a State institution, and the work was done, under the auspices of the State Board of Agriculture, by Mr. Stephen G. Worth, Superintendent of Fish and Fisheries. Millions of shad-fry had been artificially hatched at this station and turned loose in the inland waters of the State. The number placed in the streams tributary to the Albemarle Sound from 1877 to 1880 was 10,963,000; in streams tributary to Pamlico Sound, 3,846,000.

The shellfish of these waters, however, merit some mention. There are extensive beds of clams on the banks, and they are taken from their beds in the sand in great numbers. The demand is largely local, but the volume of export is increasing through shipments to New York. The oyster interests of this section bid fair at an early day to assume large proportions, by the aid of favorable legislation and by proper culture. The Pamlico Sound and its tributaries form a vast natural oyster field, that, with improved methods of culture, will supply a large demand. The whole floor of the sound, covering hundreds of square miles, can readily be converted into productive oyster fields. In many places the natural oyster rock now covers the bottom for miles, and oysters can be gathered in quantities at a cost of about twenty cents and less per bushel. Some of these oysters are of superior size and quality. In places where they have been artificially planted they compare favorably with the best cultivated products of the Chesapeake Bay.

Several highly-prized varieties of turtle and terrapin are to be found in quantities in the waters of the Albemarle section. Diamond-back terrapins, the most valuable of them all, abound in places, and are taken and shipped in considerable quantities.

The following information was communicated by Dr. W. R. Capehart after the preceding matter had been sent to the press. As this gentleman is authority on fish and fisheries, it is just to him and the subject to add his information:

Prior to 1800 gill nets were the only device for catching shad and sturgeon. Soon after that date seines were rigged and operated—Mr. Jos. B. and Charles Skinner, Mr. Cullen Capehart and Mr. Starke Armistead, being the first to embark in the new enterprise. Great success followed, and rapidly seine beaches were cleared all along the streams of Albemarle Sound down to Roanoke Island, and were operated until the beginning of the war—manual labor and horse-power being used. Mr. Cullen Capehart in one season realized a profit of \$18,000 in sixty days—160,000 shad, besides several barrels of herrings, etc. At that date, 1844, all fish of each variety were cut, salted and shipped to Bath, Baltimore, Richmond, Philadelphia and New York. In 1850 we commenced packing shad in vessels and shipping North. Said vessel being laden with ice (ice-grinding machines on deck), and, dropping anchor in front of one of the large fisheries, purchased the shad, started the grinder, and soon the vessel was laden with shad packed in ground ice, when it would set sail for New York.

As soon as we commenced fishing after the close of the war, a new mode was commenced, shad, herring, striped bass and perch were packed in boxes containing fifty shad and filled with finely ground ice, and shipped by fast freight to Baltimore, Philadelphia and New York, and this has continued to the present date. The catch varies very much some seasons. I have known one beach to catch 160,000 shad in sixty-five days, and I have known the same beach to catch only 14,000 to a season. The expense was from \$8,000 to \$10,000 per season. Formerly, or until 1872, large boats, propelled by ten long oars, were used to convey the seines. But Capt. Peter M. Warren in 1872 constructed a flat-bottom steamer. These boats are very seaworthy, going in almost any water. He also patented a steam gear for drawing the seines to the shore, so that, from that date to the present, the large seines are put out on large steamboats and drawn to the shore by steam-engines, an engine-house with steam drums being at each extremity of the beach. About this date a new and economical device was placed in our waters, known as the pound or stationary net, and commonly called dutch net, because a Pennsylvania Dutchman first put them in Albemarle Sound. Now our streams are lined with these nets. Thousands of yards, yes hundreds of miles, of this netting is found along the streams of Albemarle Sound and Chowan River. They have proved a very successful mode of catching all varieties of fish coming into our waters. A well-rigged sound seine is worth about \$5,000. It has 3,800 yards of netting, depth to suit location fished. It has about 8,000 corks on the top line; they cost 8 to 10 cents each. We in former years caught sturgeon in great numbers, but in the past few years nets by the mile fill Albemarle sound all through the summer or spawning season—the object being to capture the female

sturgeon to take the roe (or egg) from which cavaire is made, and we then ship it to Russia and Germany. This has destroyed the mother fish until the catch is hardly remunerative. I have sold hundreds of sturgeon for \$1 each, that \$10 worth of cavaire could have been made from. The roe had no value at that date.

The rope used is from $2\frac{1}{4}$ to $3\frac{3}{4}$ inches in circumference and costs about 20 cents per pound. About 50 coils 200 yards long being necessary to equip said seine, and is such as that used for whaling purposes by the New England whalers for fifty years past—the very best Russian hemp being necessary. The catch of shad diminished until individual effort to hatch shad artificially at the headwaters of Albemarle Sound, followed by State and then United States work, to a certain extent replenished our exhausted waters, and this season our seine caught 77,225 shad. Unfortunately the State abandoned its work and the United States saw fit to transfer its labors to more northern waters.

Albemarle catch of shad, is about	5,000,000
Herring catch	150,000,000
Siped bass	50,000 lbs.
Perch	200,000
Sturgeon	10,000 fish.

I send you a card which I copied from the sales-book of Messrs. Lanphear & Haff, Fulton Market, New York, in 1888, showing how shad are stored, handled, and how North Carolina compared with other States all near New York, Florida excepted.

North Carolina	250,606
Florida	12,772
Virginia	3,776
New York	66,416
Connecticut	26,472
Maine	2,588

OYSTERS AND THE OYSTER SURVEY.

The abundance in which oysters were found along the Atlantic coast of the United States, and their superior excellence, made them at once, upon the settlement of the country along the waters which provided them, an article both of subsistence and luxury. With the increase of interior population and the provision of quick and ready means of transportation, the use of them was enormously enlarged, and the distribution of them, in all the forms of use, became co-extensive with the American continent, and was not confined to that broad area, for Europe, in the diminution of its own supplies, and also in its recognition of the superiority of the American oyster, has been for a number of years a large consumer. The consequence is the depletion of many grounds once regarded as inexhaustible, the diminution in other waters where diminution seemed impossible, followed by the assertion of local rights, attempts at the exclusion of invading trespassers, contention, bloodshed; finally legislative action and the effort to define rights by law, with power to assert and secure them by force; and all this made necessary because human nature knows no moderation in the use of the abundant free gifts of Providence, or in the attainment of that which leads to competency or wealth.

The attempt to retrace the steps of past waste and neglect is what invariably follows in locking the stable door after the horse has gone—vain regrets and fruitless self-reproach. All the deep research of science,

all the costly experiments of artificial breeding, all the labor of planting new territory of waters, will not bring back to Connecticut, New York, Maryland and Virginia the store they wasted and the abundance they so universally squandered.

It happens that there remains one treasure-house not yet plundered, one great water granary whose doors are not yet thrown wide open. North Carolina, overlooked and despised in the Eldorado of the Chesapeake, now, when the glories of the latter are fading, is found to possess what, with prudence, patience, legislative wisdom and local self-control, may be converted into a field quite as prolific as the once teeming oyster waters of Maryland and Virginia. Its sounds, its bays and its creeks, extending along the coast for a hundred and eighty miles, give promise of natural conditions that will assure in time as large a product as ever existed in other waters. Some of these North Carolina waters are too much freshened by the influx of fresh-water rivers to have been the *habitat* of the native oyster, or to be made available as beds for artificial culture; but in all the other waters, which exist in the largest proportion, to which the salt waters of the ocean have ready access, the native oyster has always been found, and of great excellence. In the depletion of the oyster grounds of the Chesapeake and other waters, the enterprise of the oystermen of those localities was on the alert to save their industries from ruin, and the invasion of the North Carolina waters was rewarded with the discovery of a large relatively untried area. To check what threatened to effect here what had been done elsewhere, and to secure the people of North Carolina in the possession of their rights, the aid of legislation was earnestly invoked.

One of the first decisive steps taken was the enactment of a law, ratified March 11, 1885, directing the State Board of Agriculture to cause a survey to be made, both of natural oyster-beds and private oyster gardens, with reference to the culture of shellfish. Under the act the Governor was requested to ask the Federal Government to detail some person in the public service, expert in such matters, to make the necessary surveys. In compliance with the request, Lieut. Francis Winslow, U. S. N., was detailed. He has made two reports, extracts from which are here made.

In his first report he says the waters subject to the jurisdiction of North Carolina consist mainly of twelve sounds, extending along the coast and connected with each other from the Virginia line in Lat. $36^{\circ} 33'$ W. to the Cape Fear River in Lat. $34^{\circ} 53'$ W. These sounds are Currituck, Albemarle, Roanoke, Croatan, Pamlico, Core, Bogue, Stump, Topsail, Middle, Masonboro and Myrtle, and four estuaries known as Bogue, Bear, Brown and New Inlets. The harbor of Beaufort and the mouth of the Cape Fear River form other inlets. Some of these sounds, such as Albemarle and Currituck, being principally fresh water, are excluded from the consideration of oyster culture. Albemarle Sound receives the waters of several large rivers, and contains within its own limits 5,631,400,000 tons of fresh water. The other waters are all suitable to the growth of the oyster in its native beds, or for its propagation by planting. Lieutenant Winslow says:

Oysters will and do live on bottoms of almost directly opposite character. They are found on sand-shoals and in soft mud, on rocks, stumps and trees, and in clay and along the borders of marshes. In the same way they exist in water that is almost fresh, and in other cases where it is almost salt. The study of other localities has given, however, a standard for comparison, and it may be accepted that the bottom should be as nearly as possible of sand or other substance sufficiently hard to support the oyster, covered by a light layer of sticky mud. The principal necessity is that the oyster should not be smothered either by sinking into the bottom or by the shifting of the sand or other superficial stratum. In addition to the character of the bottom itself, it must be ascertained whether there is on it too great an amount of animal and vegetable life to permit the introduction of new forms. In other words, some study of the fauna and flora of the bottom must be made. Generally speaking, antagonistic forms of life can be eradicated, just as weeds, worms or bugs can be removed from a tract of upland, but in some cases the practical difficulty of doing so is so great as to render the locality unsuitable for experiment. The scrutiny of the bottom had, therefore, the ascertainment of the foregoing particulars as an end. To accomplish it the ground has been felt over with a pole.

In another report Lieutenant Winslow gives the following information:

Prior to 1886 the oyster business of the State was in an absolutely insignificant condition. With an area suitable for oyster cultivation exceeding that of any State in the Union except Virginia and Maryland, North Carolina received less than one-half per cent. of the aggregate profits of the great oyster industry of the country, and contributed less than one per cent. to its capital. While the industry in every other oyster-growing State employed thousands of people, and in Maryland and Virginia tens of thousands, this State, by a very liberal estimate, gave occupation but to one thousand persons. The positions and areas of the natural beds were unknown to a considerable extent. Equal if not greater ignorance as to the possibilities of cultivation was even more prevalent. A few persons had attempted to increase the supply under the provisions of The Code, but the law was of such a character as to encourage the destruction of the natural beds through their direct appropriation or through depredations upon them. Complaint was general, both from those who worked the general public and common property and from those who were endeavoring to cultivate private grounds. The oysters of the State were unknown, except locally, and finally the business paid little to the owners and nothing to the State.

Since the survey has been in progress, knowledge of the possibilities of the locality and of the business has become diffused among the citizens, not only of North Carolina, but of other States, and the effect has been to induce a large number of people to enter grounds. In Dare County forty-three entries have been made, comprising at least twenty-six thousand acres. In Hyde County three hundred and thirty-nine entries have been made, comprising fully twenty-six thousand acres; and in Carteret County, ninety entries, comprising nine hundred acres. Of these entries sixty-eight are by residents of other States, and four hundred and four by residents of North Carolina. Entries are still being made and warrants for surveys are still coming in, and in the course of another year it is quite possible that the territory may be doubled. But, as it is, an aggregate of fifty-three thousand acres entered is a sufficiently gratifying indication of the value of the survey and of the legislation it brought about.

The cultivation of this immense tract will require a great deal of time, money, and labor. Thousands of people must be employed and hundreds of thousands of dollars spent. But every dollar so expended goes to increase the material wealth of the State, and the employment of every man insures additional comforts and conveniences to the families of the citizens of the seaboard counties. It is with pleasure that I have noted that one of the first, if not the first, to venture in this new field, is a citizen of Hyde County, who is reported to have abandoned a profitable lumber business for the purpose of engaging in oyster growing, and who has, I understand, the intention of making as his original outlay a sum about equal to the total value, prior to 1886, of the whole oyster industry of the State.

The natural beds have not only been defined and located, but under the recent law much additional area adjacent to them has been set apart and excepted from entry. These areas are the public grounds, and by law they include the natural beds and sufficient area adjacent and surrounding them, to provide for their natural expansion. The provision for allowance for natural expansion has been liberally construed, as will be seen by the following summary of the areas of the natural beds and public grounds:

<i>County.</i>	<i>Area Public Grounds.</i>	<i>Area Natural Beds.</i>
Dare	4,604.16	2,118.25
Hyde	6,891.94	1,642.90
Pamlico	4,495.61	437 00
Carteret	4,561.40	1,012.50
Total	20,553.11	5,210.65

Or the area of the public grounds exceeds that of the natural beds by 15,343 acres. The natural beds of that portion of the State not under the operation of the new law comprise 3,381 acres; or the total acreage of natural beds is 8,591.

The area reserved from the common fishery is thus ample for all time to come, and as these areas are excepted from entry, and as they include the natural beds, not only is an entry or appropriation of a natural bed prevented, but no person can, practically, enter near a natural bed. At the same time, as the grounds open to the general fishery are defined and known, the private cultivator is free from depredation under guise of the exercise of the common right of fishery. Thus the source of complaint of all classes interested is removed.

The area entered will bring into the State Treasury over \$12,000, a net gain over the entire expenses of over \$7,000, and the taxes that will eventually accrue to the counties and State may amount in the course of a comparatively few years to fully \$10,000 per annum.

Legislation is now ample, if enforced, to protect and promote the oyster interests of the State. It is unlawful to use any instrument but hand-tongs to take oysters from State grounds, violation of which is indictable as a misdemeanor. Only residents of the State are permitted to use instruments or boats upon State grounds; and non-residents, upon conviction of violation of this provision, are to be fined not less than \$500, or be confined in the county jail, to be hired out by the Commissioners of the county for a term not less than one year. Residents must obtain a license for the use of boats, and individuals desiring to catch oysters, whether on their own account or that of employers, must take out from the Clerk of the Court an annual license, paying for the same \$2.50 and a Clerk's fee of twenty-five cents, and must make oath that he has been a *bona fide* resident of the State for twelve months next preceding the application for license. Oysters are to be culled on the public grounds when taken, and oysters of a specified size are to be returned to the waters on the public grounds. Oysters must not be taken from the public grounds between the first day of May and the first day of October. The control of the oyster interest is placed under charge of one Chief Commissioner, to be appointed by the Governor, and to hold office; and, to enable the Commissioner to discharge his duties of visiting the grounds and repelling or capturing interlopers, a patrol boat is provided, with authority to use arms when necessary.

The oysters taken at the different points in the sounds and estuaries vary much in size, shape and flavor. The New River oysters are much prized for size and flavor, and probably are the best known abroad. But the markets of Wilmington, Newbern, Washington and other points are supplied from their various oyster grounds with shellfish of a quality not inferior to those taken at New River. With the care in cultivation, and the protection given by law, it is only a question of time when the waters of North Carolina will yield as abundantly as the waters of the Chesapeake have done, and, in quality of the oyster, with no inferiority.

The diamond-back terrapin is found in all the coast country, a delicacy in such demand and of such value as to have become the subject of legislative protection and of artificial cultivation.

Clams abound, and are now recognized as valuable members of the family of shellfish. They are now shipped in large quantities from Newbern and Morehead City.

NURSERIES, ETC.

The happy intermediate position of North Carolina, between the extremes of semi-arctic and semi-tropical temperature, the needed degree of cold to check continuous exuberance of growth, but the absence of that degree of cold fatal to arrested and dormant vitality—on the other hand, early awakening to the vivifying influences of spring and subsequent continuous but not excessive heats—early suggested it as possessing the proper medium of climate for the propagation of the fruits of the temperate zone, and also the locality from which they might be disseminated over a wide area, not only in this but in adjoining States. Therefore it was that a long time ago the Lindleys of Chatham County, the Westbrooks of Guilford, and other initiative pomologists, began the cultivation of nursery fruit trees and the business of distributing them through the country, delivering them most frequently from their own wagons in the court-house towns during court weeks. The excellence of the fruits obtained in this way was so decided as to induce the entry into the business of others in other parts of the State, and also the distribution of nursery trees throughout other States. As the facilities for transportation by railroad were given, so was the business enlarged; so that now the young trees from North Carolina nurseries find favor everywhere in the South and West, and to some extent in the North. The largest of these now is unquestionably the

POMONA HILL NURSERY,

Two miles west of Greensboro, on the railroad at the point where the Salem branch leaves the North Carolina division of the Richmond and Danville system, and its broad acres of young plants or of bearing orchards are plainly seen from the trains as they pass through them. Mr. J. Van Lindley is the proprietor. It is a business of such magnitude as to exact the best business skill and capacity in its management, in culture, in sagacious selection of sorts, in packing, in shipping, in correspondence, in keeping of accounts—in other words, in efficient office work, and this is largely entrusted to Mr. W. C. Boren and his brother, Mr. G. S. Boren.

The Pomona Hill Nurseries originated in 1874, Mr. Van Lindley becoming the successor of Mr. Joshua Lindley, who might claim to be the pioneer in the nursery business in the State, though contiguous to the Lindley nurseries were the large and once successful nurseries of

Westbrook & Mendenhall. There are nine hundred acres in the tract, of which fifty are in bearing orchards, giving practical illustration of the character of the varieties of fruits originating and propagated here. There are two hundred and fifty acres in young trees, waiting their turn for shipment—one or two years old, as may be desired; and many acres are sown in fruit seed to furnish stocks for budding and grafting. There are annually sown in drills eighty bushels of peach stones, dropped as soon as possible after the use of the fruit; and from four to five bushels of apple seed, which are all imported from France. The cultivation is conducted with the utmost care and with scientific skill; it need not be added, with perfect fidelity. Thus, the business has grown to the extent of creating a demand in all the Southern States, from Delaware south, and west as far as Arkansas. The sales last year (1891) amounted to \$75,000. The list of nursery trees and plants include the best variety of apples (winter and summer), peaches (from the earliest to the latest), pears, plums, cherries, apricots, nectarines, grapes; small fruits—strawberries, raspberries, blackberries, currants, gooseberries and others. Much attention is paid also to testing the value of new foreign varieties of fruits, berries and nuts, ornamental trees, shrubbery and plants.

There are other nurseries in the State, but none so large; and, in the absence of precise information, the Pomona Hill Nurseries may be cited as an illustration of what may be done with skill and energy.

BULBS AND FLOWERS.

These succeed so well that there is not a large town in the State which has not its nursery and green-house for the supply not only of its locality, but remote points. Asheville, Charlotte, Fayetteville, Greensboro, Raleigh, Wilmington, Wilson and other places have profited by the skill of their florists. Of bulbs, climate and soil appear to offer special favor. At Magnolia, on the Wilmington and Weldon Railroad, the tuberose is planted to the extent of many acres, and with the result that annually many hundred barrels of tubers are shipped to supply Northern and European demand. The value of this industry to this State is so great, and the adaptability of our soil and climate to its perfection so marked and peculiar, that the following, from the *American Agriculturist*, is quoted for the encouragement of those who might wish to embark in the culture of the tuberose:

“The late John Henderson, of Flushing, L. I., was the first to engage in the cultivation of tuberose for commercial purposes. Previous to 1856 all the tuberose bulbs were grown in Italy * * * At first his largest output would not exceed an acre, and for several years the bulbs sold at from six to eight dollars per hundred. His success tempted others on Long Island into the business, and all made such reputation that the imports of Italian bulbs fell off. * * * At the close of the war some of the dealers saw in North Carolina a congenial home for the tuberose, and commenced its growth. There the seasons are sufficiently long for the bulbs to perfect their growth in one year from the

sets, which they will not do at the North in less than two. The climate on the coast is most favorable to the development of the bulb, and the soil in all respects well adapted to its perfection. This enterprise has completely revolutionized the tuberose industry. The South, able to produce as good or better bulbs in one year than the North can in two, has it all her own way. Southern growers are able to sell tuberose bulbs at the same price per thousand as the growers at the North must have per hundred, the difference being caused by the expense of protection and loss by waste in carrying the bulbs through the winter."

HERBS.

To North Carolina belongs the peculiar honor of providing the largest supplies and the greatest variety of herbs in use for botanic medicines gathered in the United States. In this State the business of gathering them is in the hands of one firm—the Messrs. Wallace, of Statesville. The members of the firm are specially trained for the business, having received a thorough botanical education. They employ three hundred agents in contracting for supplies of herbs, barks, etc., and the number of collectors, most of them living among the mountains, is innumerable; and the capital invested amounts to several hundred thousand dollars. The collections, as they come in, are stored in a series of large warehouses, and sorted and prepared for shipment to all parts of the civilized world. On the Atlantic slope of the Blue Ridge there are said to grow no less than 2,500 varieties of plants used in the *Materia Medica*. A large number of these come into the hands of the Messrs. Wallace. The yearly business of their house nearly reaches two million pounds in leaves, barks and roots. Some of the collections include many of the most familiar weeds and the bark and roots of the most common trees and shrubs. This will be illustrated by the following extract from the order-book of the firm, covering one month's business:

"Fifty thousand pounds of mandrake, 5,000 pounds black cohosh root, 12,000 pounds of wild-cherry bark, 24,000 of sassafras bark, 6,000 of birch bark, 8,000 of red clover blossoms, 12,000 of pennyroyal leaves, 9,000 of catnip leaves, 8,000 of stramonium leaves, 8,000 of witch-hazel leaves, 8,000 of yellow dock, 6,500 of 'queen's delight' root, 8,000 of unicorn root," etc.

Ginseng, snake-root, lobelia, blood-root, mandrake and many others find a ready market with the Wallaces. The ginseng is the rarest, the most valuable and practically the most useless, and finding sale only to the Chinese, who set upon it a fabulous value. The collectors are paid from \$2 to \$3 a pound, and in China it is worth its weight in silver.

THE GRAPE IN NORTH CAROLINA.

The glowing accounts given by the adventurers who first landed upon the North Carolina coast, and the subsequent confirmation of these reports by the settlers, extending in the course of time their observa-

tions from the sea-coast to the mountains, might have suggested that the whole territory would eventually become the land of the vine and the fruitful source of wines that would equal in abundance and excellence the mighty flow of the European vineyards. Such was not the reality, and it is only in recent years that grape-culture and wine-making have been thought worthy of attention. The inhabitants seemed to have relied upon the spontaneous bounty of nature for their store of grapes, and, in the processes of wine-making, adopted the rude simplicity applicable to the making of cider. The outcome was not wine, but grape-juice developed into a coarse, strong or sweet beverage, without delicacy, without aroma, and repugnant to refined tastes and cultivated palates. Failure to produce good wine was attributed to the native grapes, not to the methods of manufacture; and vignerons, who were not a few, and connoisseurs, of whom there were many, pronounced unanimously and emphatically against the American grape. The adaptability, both of soil and climate, to grape-growing and wine-making, was so apparent that persistent efforts were made through many years to achieve success in both. Adlum in Washington City, Herbemont in Columbia, S. C., Longworth in Cincinnati, were among the most determined pioneers in individual efforts to solve the problem. Nor were united efforts on a large scale wanting; for, after the downfall of Napoleon, a colony of his associated Generals, and also of his soldiers, feeling themselves no longer safe in France, emigrated to America, and by them a large colony was planted in Alabama, between the Alabama and the Tombigbee Rivers, with purpose to renew the habits and refinements of La Belle France in the depths of the American wilderness. The name of their town, Marengo, is the only suggestion remaining of a scheme which met with ignominious failure; for they, like all others who attempted the cultivation of the grape, despised the native and depended upon the foreign grape.

Perhaps to Longworth is due the recognition of the value of at least one American grape—the Catawba; and his success with that induced investigation into the character of other grapes, stimulated by the disastrous failures in the attempted general diffusion and use of the European grapes, and in late years made imperative by the universal disasters to the European vineyards—the natural consequences of disease and infirmities of centuries of artificial training and habits. The European grape is now discarded as a vineyard grape, except in the dry climates of New Mexico and California, and the promise is now good that the Atlantic slope of the United States will become the great grape-growing and wine-making section of the world, in which the stock is new, the plants healthy and vigorous, and the product satisfactory, if dependence upon foreign standards of taste is cast off; for it should not be forgotten that the American grape, however improved and refined, has a character and flavor of its own, and the attempt to imitate the European wines in full perfection only results, like all imitations, in failure or imperfection.

The leading native varieties from which the numerous sub-varieties have been produced are the common summer grape (*Vitis Æstivalis*),

from which come the Warren, Herbemont, Lenoir, the Lincoln and others—perhaps, also, the Delaware, but this is not well identified. The Lincoln is a distinctively North Carolina grape, originating, it is believed, on the South Fork of the Catawba River, in Lincoln County.

The fox grape (*V. Labrusca*) is found in the Middle and Western Sections of the State. From this many valuable cultivated varieties have been produced. The earliest of these is perhaps the Isabella grape, first cultivated near Wilmington as far back as 1805. But the origin of this grape as an American grape has never been accurately determined, and as it is not now in favor, controversy about it is languid. There is no dispute about the Catawba grape originating on Cane Creek, in Buncombe County, and brought into notice about 1801 by Captain Clayton, and attracting Longworth's attention in 1826. As a table and wine grape, it is now so universally known as to need no further reference, except to the fact that it is clearly of North Carolina origin. From this grape come numberless cultivated varieties, among which are the Concord, Hartford Prolific, Niagara, Martha; and the number of new forms increases with each year. From this family come the choicest American table and wine grapes.

The muscadine (*V. Vulpina*) is of extensive diffusion, from Maryland and Kentucky as far south as the Gulf and Texas, and known by various names, such as muscadine, bullace, fox grape, mustang, etc. In North Carolina it appears on the coast to the very edge of the surf, and up among the valleys of the mountains. In this State alone have any varieties originated that commend them to introduction into the vineyard, and these varieties are the sports of nature, not the outcome of art; for no grape is so intractable and impatient of artificial treatment as the muscadine. It must ramble and clamber at will, and it submits to no trimming and pruning. A vineyard of this grape is therefore unlike any other—the vines trained on broad flat scaffolds, enlarged to accommodate each season's growth until they spread over an area of from a quarter to half an acre. Indulged in its freedom, it amply rewards the care given to it. It is never sick, it never fails in its crop, and it is most profuse in its yield, the product of a single vine in wine being often from one to five barrels.

It is remarkable that the valuable varieties of the *V. Vulpina* have, so far, originated only in North Carolina, and a still more remarkable fact that these sports are of comparative recent discovery. The best known and the most widely diffused of them—the Scuppernong—does not appear to have been known anterior to 1774, when the Rev. Charles Pettegrew discovered it in the lowgrounds of the Scuppernong River, in Tyrrell County, and transplanted several of the wild vines, and from these the present abundant vineyards have originated. Another account assigns the discovery to two brothers named Alexander, of the same county, at about the same period. Within the past half-century other varieties have been discovered growing wild, among which are the Meish, the Flowers, and later still, the James. The Scuppernong is an amber-colored berry, growing in loose clusters of from six to ten. The other varieties have the same habit, but are dark-skinned. None of

these grapes flourish north of this State, nor will they thrive much farther west than Haw River, in Alamance County, though single vines are sometimes cultivated beyond that point.

VINEYARDS.

Within the past twenty-five years attention has been given to the creation of vineyards for the manufacture of wine, and also, to greater extent, to the supply of the Northern city markets with the freshly-gathered grape. This last purpose has been greatly stimulated by the rapid enlargement of railroad facilities, which enable growers to place their fruit on the market quickly and in good order, and the ability also to anticipate by a fortnight or more the growers north of them, and to succeed in regular sequence the growers in the States south of them.

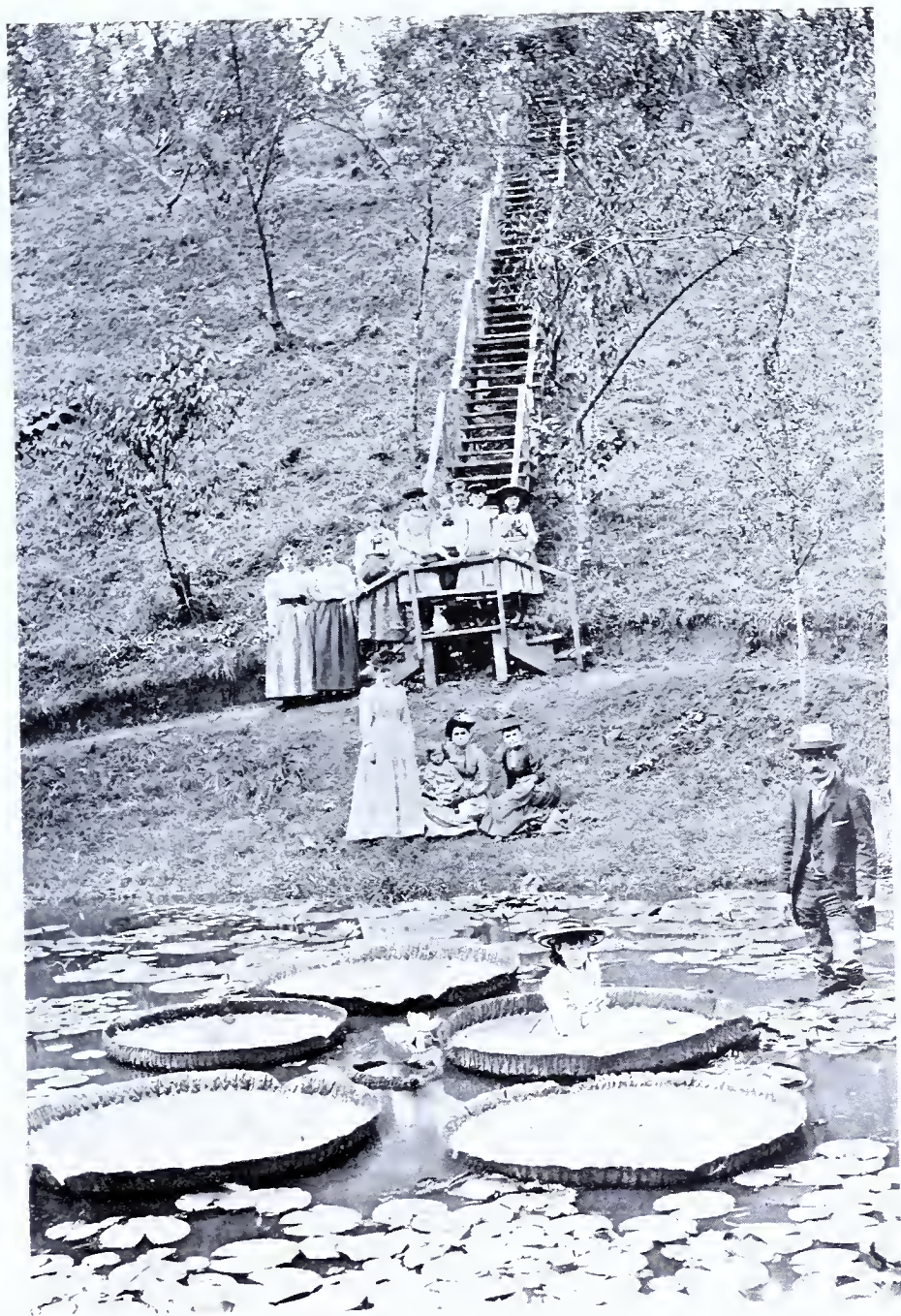
It is not proposed to give a detailed account of all the vineyards in the State, because of the impracticability of giving information without a special effort, at the expense of much time and considerable cost to obtain it. It must suffice to give some examples of what is being done, and these must serve as illustrations. Some of the oldest and most noted vineyards in North Carolina are worthy of note. Among these is the

MEDOC VINEYARD,

In Halifax County, long ago known as the Brinkleyville Vineyards, owned by the venerable Sidney Weller, a respected Methodist preacher. Originally these vineyards were planted with the Scuppernong vine only, and the place was a favorite resort for the whole country for many miles around. Much Scuppernong wine was made here, and it was said that from one vine alone five barrels of wine were annually made. The vineyard became the property of the Messrs. Garrett, was much enlarged, and additions made to the variety of grapes. The acreage of the vineyard is about ---- acres, and the product is almost exclusively applied to the manufacture of wine. In favorable seasons about 175,000 gallons are made, the product being both still and sparkling wines. A good brandy is also made. The equipment for wine-making is full and of the most perfect character, and the wine is in high repute and finds ready sale throughout the United States.

THE TOKAY VINEYARD

Is situated about three and a half miles north of Fayetteville, and is the property of Col. Wharton J. Green, and is said to be the largest vineyard east of the Rocky Mountains, containing about one hundred acres in vines. These vines embrace all the cultivated varieties of the *V. Vulpina* family, and some of the *V. Labrusca*—of the first, the Scuppernong, Meish, and Flowers; of the second, the Norton, Cynthia, Herman, Martha, Champion, and Concord; the vineyard also containing Ives, Delaware, Cottage and others. Wine-making is the leading object in the work of the vineyard, though there are large shipments of fruit. The equipment for making, storing, bottling and shipment of the wine is complete. The character of the wine is well established. A recent



VICTORIA REGIA, GROWN IN OPEN AIR AT WINSTON.

order for 25,000 gallons was made by a Memphis (Tenn.) merchant for twenty-three cents a gallon more than was paid for a corresponding California wine. The annual product is from 75,000 to 100,000 gallons. A writer in a Northern journal of influence speaks of the wines of the Tokay Vineyard as follows:

"In general characteristics they resemble the Spanish and Madeira wines, and the Sweet White is not unlike the California Mission, though much more delicate in bouquet, and, when given proper age, approaches the closest to a fine old Madeira of any wine yet produced in this country. This wine will constitute a good basis for a sherry wine when made with that view, and we have seen some samples of such from these vineyards which strongly resemble Old Brown Sherry, and would do credit to any gentleman's sideboard and private cellar. Other samples, again, made from the Flowers, a black Scuppernong seedling—a dry wine—resemble certain red wines of Hungary already highly esteemed in this country, and, as a sweet wine, bears a close relation in character to Spanish Red."

THE BORDEAUX VINEYARD, three or four miles west of Fayetteville, the property of Mr. James M. Pearce, is planted largely with the Scuppernong, of which there are 500 vines in bearing—a very large number, when the space occupied by each vine is considered. The grapes, in their season, are shipped largely, principally to western points in this State. The vineyard also contains other grapes.

Large and valuable vineyards flourish near Wilmington, the most important of which is that of Captain Nobles.

Southern Pines, in the south-west corner of Moore County, is the location of many hundred acres of vineyards, destined in time to be probably the most extensive in the State. The vines now coming into bearing are all of the choicest American grapes, and are cultivated with care and skill. These, together with the extensive orchards of peach trees and the large plantings of small fruits, are destined to give great prominence to a section only recently valued for its pines and their products.

West of the Blue Ridge there is as yet no large culture of vineyards. Capt. J. K. Hoyt, at Engadine, fifteen miles west of Asheville, has a vineyard of several acres, from which he makes a wine of very high repute. At the foot of the Blue Ridge, at Old Fort, Mr. Golay, a Swiss gentleman, has a large and productive vineyard, noticeable from the circumstance that, with European contempt of American grapes, he stocked his vineyard, at great cost, with European grapes, and lost them all, as they brought with them the seeds of European disease. He has replaced them with the native grape.

Through many other counties in the State—Davie, Forsyth, Guilford, Alamance, Warren, Vance, and in nearly all the eastern counties, where the Scuppernong family best thrives—the interest in viticulture is annually increasing and the industry is becoming a very general one.

Wake County is much interested in the subject, and, as it is the only one that has a grape-growers' association, it is the only one from which approximately full returns are obtainable. The following information has been furnished:

B. P. Williamson has ten acres in vineyard. His vines are chiefly Concord and Ives. The grapes are shipped to Northern markets to the extent of 2,000 baskets during the season. The season begins about the 15th of July, and continues until the middle of August; beginning when the Florida season ends, and a fortnight before that of Virginia begins.

J. M. Heek has thirty-five acres in Ives, Concord and Champion, the latter not very successful. He ships about 8,000 baskets of ten pounds each annually. His vineyard, as well as most of the Wake County vineyards, is in the vicinity of Raleigh. He has also a vineyard of twenty acres near Ridgeway, in Warren County, from which he ships about 5,000 baskets. About 250 baskets to the acre is apparently the average yield, and the net sales amount to from \$50 to \$100 per acre, according to season and condition of market. This explanation will apply to the vineyards hereafter mentioned.

H. Mahler has about twenty acres, the product of which is largely converted into wine. George Shellem, twenty acres; wine and shipping. Batchelor & Womble, twelve acres; shipping. H. Bilyeu, fifteen acres of Ives, Concord and Delaware; shipping. C. B. Edwards, twenty acres, Moore's Early, Delaware, Niagara, Ives and Concord; shipping. V. Royster, fifteen acres, Ives and Concord; shipping. B. G. Cowper, twenty-five acres, Ives and Concord; shipping. M. A. Parker, Ives and Concord; shipping. J. B. Burwell, Ives and Concord; shipping. Dr. Lewis, Ives and Concord; shipping. Davis & Bradshaw, Phil. H. Andrews, Dr. Fuller, Ives and Concord; shipping. C. D. Upchurch, ten acres, Ives. George Cole, ten acres, Ives and Concord; shipping. S. Otho Wilson, twenty acres, Ives and Concord; shipping. Fred. Watson, twelve acres, Ives, Concord and Delaware. Robert Strong, ten acres, Ives, Concord, Delaware and Moore's Early. Whiting Brothers, twenty-five acres, Ives, Concord, Delaware and Niagara. W. H. Pace, eight acres, Ives and Concord. Ferguson, fifteen acres, Ives, Concord and Martha. Jesse Jones, five acres, Concord. In the vicinity of Wake Forest, B. F. Montague has ten acres, Ives and Concord; James Moore, twelve acres, Ives and Concord.

Mr. John Robinson, Commissioner of Agriculture, has ten acres in the vicinity of Raleigh, and Judge Walter Clark, ten acres in Halifax County, planted with Ives.

The favorite grapes are Ives and Concord; other varieties, though cultivated to some extent, are mostly neglected. Most of the vineyardists ship their crops, as soon as matured, to the Northern markets. Only a few convert them into wine, except when the market is overstocked.

In all, there appears to be 359 acres in cultivation in the vicinity of Raleigh, with an annual crop of 89,750 baskets.

RESORTS—HOTELS.

Since the facilities of travel have been multiplied throughout North Carolina, making the sea-side, the middle section and the mountains equally accessible, with quickness and comfort to all its people, there has been remarkable and rapid development throughout the State of such places as assure recreation, rest and health to all visitors, and to such degree of excellence as not only to attract our own people, but to influence the choice of visitors from all parts of the Union. Nor is alleviation from the heat of summer the only motive that governs the tide of travel or the search after health. The winter airs are relatively so balmy as to woo the Northern invalid to inhale them, and in the mountain section, somewhat colder, so dry and invigorating as to commend themselves to the scientific judgment of the most intelligent Northern physicians as the surest hope of the sufferer from pulmonary or debilitating complaints. Therefore, in winter and in summer, the whole State is becoming the health resort for those beyond its lines, and for those within, a pleasant and economical substitute for those costly summer jaunts which fashion or necessity once compelled to Saratoga, Cape May or the Virginia Springs.

THE SEA-SIDE RESORTS

Are of comparatively recent prominence, because, until within a few years, they have been practically more remote than those of distant States. Now they are accessible quickly and conveniently, by either steamboat or railroad, and are all made so attractive by the comforts, the elegances and the amusements provided by hotels of the first class as to attract to them continuous throngs of satisfied summer visitors.

NAG'S HEAD,

At the head of Roanoke Sound, and at the eastern end of Albemarle Sound, is on the strip of banks which interpose between those inland waters and the rage of the outside ocean. It occupies the site of the inlet which once lay open to navigation, and through which the first discoverers and attempted colonists sought the North Carolina shores. This inlet has long since been closed by the resistless forces of continuous storms; and where the waters once flowed, a sandy strip, interspersed with high billowy dunes, drifted from spot to spot by the might of the winds, uplifts itself, enlivened here and there by groups of cedars, scattered pines and verdant patches of the bright evergreen yupon. Amid these the hotel is situated, in such position as to command a view of the outer and the inner waters, and to control all the varied amusements of bathing, boating, fishing and other aquatic sports. This place is reached from the mainland by steamboats from Elizabeth City and other points on the waters of Albemarle Sound, and is a favorite summer resort, sought most largely by our own people and those from the adjacent parts of Virginia.

BEAUFORT HARBOR,

On the shores of which are the towns of Beaufort and Morehead City, has become the seat of much summer enjoyment, made attractive by a number of fine hotels and excellent boarding-houses, all so situated as to command all the elements of pleasure or of health to be drawn from sea-breezes, boating, bathing, fishing and all the enjoyments of a sea-side resort. Beaufort harbor is open to the sea, yet protected from its violence; and all the amusements and methods of recreation are enjoyed in perfect safety. Beaufort is on the east side of the harbor, about three and a half miles across from Morehead City. There are several fine boarding-houses at this place, but no large hotel, none having been built to replace the great Atlantic Hotel, destroyed in the hurricane of 1879. Morehead City, on the peninsula between Calico Creek and the waters of Newport River on the north and Bogue Sound on the south, is the terminus of the Atlantic and North Carolina Railroad, and at the point of the peninsula stands the new Atlantic Hotel, one of the largest structures of the kind in the State—a building of six hundred feet front and three stories high, with outbuildings and annexes to meet every want. This is the great summer resort for the people of the interior, and, during the season, is filled with visitors from all parts of the country. It is here that the annual meeting of the Teachers' Assembly is held, the annual meeting of the State Tobacco Association, and conventions of different kinds. The surf-bathing on the south side of the banks is exceptionally fine and safe, the boating facilities very ample and good, the fishing unequalled in success and excitement, the sea-breezes delightful and invigorating, and there is a total absence of sandflies and mosquitoes. With the Newbern Hotel and some superior boarding-houses, Morehead City offers one of the most charming and satisfactory sea-side resorts on the whole Atlantic coast.

ISLAND BEACH HOTEL,

On Wrightsville Sound, eight miles from Wilmington, is comparatively a new resort, though Wrightsville, for more than a hundred years, with its fine water-front and its groves of live-oaks and cosy cottages, has been the annual summer home of many Wilmington families. Its eligibility pointed it out as the proper summer encampment of the North Carolina State Guard, and it is now so annually occupied.

Island Beach Hotel is on an Island between the ramified streams of tide-water which here diversify the sound, and is a hotel of first class, in size, capacity and management, with fine and safe surf-bathing and all the other conveniences and pleasures of a sea-side resort. It is reached by a railroad from Wilmington, which makes trips apportioned to the public convenience.

CAROLINA BEACH HOTEL

Is of similar character. It is reached by a steamer which runs to a landing-place fifteen miles below Wilmington, on the Cape Fear River, and from the landing a railroad crosses the narrow peninsula, a mile

and a half, to the beach. Not far below the hotel are the remains of the famous Fort Fisher, the scene of the heaviest bombardment known in warfare.

The above comprise the most frequented resorts on the coast. Southport, formerly Smithville, at the mouth of the Cape Fear River, has long been a summer resort, and a very pleasant one, but not exclusively so, for it is a port of entry, a business town, and also a county seat, thereby creating a conflict between the leisure and pleasure of a summer resort and the exactions of work and business.

MOUNTAIN RESORTS.

Since railroads have made the difficult ascent of the Blue Ridge, and made access to every part of the mountain country easy and speedy, the whole mountain region may be regarded as one vast health and pleasure resort, in winter as well as in summer. Portions of the mountain region, indeed, did not wait for the advent of the railroad. The fame of its healthfulness, the certain charms of its summer climate, and the known beauty and grandeur of its scenery three-quarters of a century ago drew annual summer pilgrimages to the Warm Springs, now the Hot Springs, Asheville, Hendersonville and Brevard, and these two last, or rather locations in their vicinity, became veritable South Carolina colonies, with permanent and elegant improvements of fine residences, ornamental grounds and highly-improved farms. The charm of scenery has never abated, the fame of climate has never deceived the trust placed in its healthful, invigorating influences, and now, since easy access is had to it from every part of the United States, Western North Carolina has become the sanitorium and the sanitarium of the whole country.

Of the localities become most favored as resorts for all seasons of the year, the following are the most prominent:

HOT SPRINGS,

On the French Broad River, thirty-seven miles below Asheville, has long been known and valued for the virtues of its thermal waters. It was known early in this century, and, until recently, as the Warm Springs—the waters of the springs bubbling up in profuse volume near the river, with a temperature of from 98 to 104, and were of marked efficacy, used as baths, for rheumatism, and were visited by large numbers of invalids, even when to reach them involved long, difficult and painful journeys. Hotel succeeded hotel in different degrees of excellence—succeeded each other as successive conflagrations made place for improved structures, with increased conveniences and luxuries, culminating at last in the present magnificent

MOUNTAIN PARK HOTEL,

In size, elegance and management, surpassed by few in the United States. The scenery is very fine, the hotel being situated in an opening, among the mountains, of a beautiful valley, about three-fourths of

a mile in width and two or three in length, around which are towering heights. The rushing river is on one side, and the bold, impetuous Spring Creek on the other. The climate is dry and exhilarating, and there is here a remarkable absence of fog *at all times*, though they may cloud the valley above and below. The bathing in the waters is made attractive and also effective by the provision of marble baths in well-constructed bath-houses, and also by the addition of a large swimming-pool. Besides its use as hot baths, the water is used for drinking, as an efficient agent in removing dyspepsia, malarial troubles, gout, rheumatism and nervous prostration. The Western North Carolina Railroad (the Paint Rock branch) runs through the valley, and two daily passenger trains connect with all parts of the country.

THE HAYWOOD WHITE SULPHUR SPRINGS

Are in Haywood County, near the town of Waynesville, and near the line of the Murphy branch of the Western North Carolina Railroad, connecting by two daily passenger trains with the railroad systems of the whole country. The spring which gave name to the property is found on the southern slope of Mount Maria Love, at an elevation of 2,845 feet above the sea. The spring itself is a distinct sulphur water, cool and pleasant to the taste, diuretic and diaphoretic in effect, and highly efficient when drank on the premises. It does not bear transportation. The chief charm of the place is the beauty of the locality, embosomed in some of the loftiest summits of the majestic Balsam Mountains, some of the highest of which confront the hotel—one of which, the Richland Balsam, reaching the height of 6,425 feet, and all the others reaching 6,000 feet. In front of the hotel, which is in a level well-shaded plain of fifty acres or more, is the valley of Richland Creek, running back in deep recesses into the depths of the mountains, and through which runs the bold, clear, sparkling Richland Creek. Beyond that is the pretty town of Waynesville, itself a very popular summer resort, standing on bold hills and backed and overtopped by grand mountain summits. It is to be questioned if anywhere in the mountains there is presented a more splendid or charming combination than is presented by this mountain-locked and valley-cheered landscape of the Richland Valley. There is a large and well-arranged hotel at the Springs, filled during the season with delighted guests.

ASHEVILLE

Holds peculiar prominence as a resort, for many reasons. It has been longer recognized as the possessor of splendors of scenery and character for health—it long ago attracted visitors on both accounts—and it was sooner prepared than other towns for the entertainment of guests and the care of the invalid. Its reputation was fixed when access was given to it by the completion of the railroads, which practically come into it from every point of the compass, and thus there followed rapid increase of population, of the throng of visitors, and in amplitude and

completeness of hotels and other abodes for the well and the sick. As a summer resort, its excellence has never been gainsaid. It took time and experience to establish faith in equal aptitude for the winter. Now there is little difference between one season and the other, eminent physicians everywhere agreeing that in the dry invigorating air of the mountains even the winter cold that is sometimes experienced is beneficial rather than detrimental even to the pulmonary invalid, and that the winter climate, so much more mild than that of the North and Northwest, from which so many of the visiting invalids come, is far more desirable than the milder but damper and more debilitating air of Florida, once the almost sole refuge for the sick and suffering. And when to natural advantages were added the assurance of the best medical skill, and also all the conveniences of a city—electric street railway, electric lighting, pure water and other indispensables—the fitness of Asheville could not fail of recognition. To all these have been added a group of hotels, in size, elegance, convenience and satisfactory management, not equalled in the South and scarcely surpassed anywhere. Of these, the principal are:

THE BATTERY PARK HOTEL,

On an eminence in the very midst of the city, overlooking everything around it, but as secluded as if miles away in the country—in the city, but not of it—with its own drives, its own electric cars, and everything to make the visitor feel that he is as far away from the crowd as he wishes, as close to it as his business or his convenience makes desirable. The hotel building is an elegant structure, in the so-called Queen Anne style, three stories in height, 300 x 175, and with broad verandas along the front, during the winter enclosed in glass. It is heated by steam and lighted by electricity. Further mention of details is needless, since a house of this character is presumed to be perfect in all its appliances, which is just presumption in this case. The views from the building from all directions are superb and the source of unending delight—over town, over valley, over mountain ranges—only closed by the blue outlines of far-distant lines which blend far away with the skies.

THE SWANNANOA HOTEL,

In the very centre of the city, is a large well-equipped and well-conducted four-story brick building, now standing the oldest and the pioneer of the system of first-class hotels.

THE KENILWORTH INN,

Two miles from Asheville, is most picturesquely situated on a height overlooking the Swannanoa River and its beautiful valley. Its situation and its architecture, its magnitude and its beauty, combine so many elements of the romantic that the imagination is taken captive, and is more apt to associate it with the visions of fancy than with the realities of every-day life. Yet it is a very substantial and a very

costly fact, for it is of great capacity and built with liberal disregard to cost. This hotel is within a few hundred yards of the station at the junction of the Western North Carolina Railroad and the Asheville and Spartanburg road.

OAKLAND HEIGHTS HOTEL,

A mile and a half from the court-house, is scarcely less beautiful than Kenilworth Inn, nor less beautifully situated than Battery Park Hotel; large, capacious, of beautiful design, surmounting a high but gently sloping hill, and overlooking a landscape that thrills the heart with the enjoyment of its charms. This, like the others named, is justly entitled to the rank of a first-class hotel.

BELMONT HOTEL *

Is a fine and capacious hotel, four miles west from Asheville, a short distance from the Murphy branch of the Western North Carolina Railroad, but reached more conveniently by a line of electric railway extending to the court-house square in Asheville. This also is a hotel of superior character. It is on the site of the old hotel made famous in the days of the Deaver Sulphur Springs, long since a trusted and favorite health resort, and retaining yet its high reputation. There is no resort in the mountains whose situation is so beautiful and commanding, or where the air is sweeter or purer.

ARDEN PARK,

As its name implies, is a fine park of several hundred acres extent, nine miles south of Asheville, on the Asheville and Spartanburg Railroad. In the park is a large and excellent hotel, and, in the summer season, largely resorted to by visitors, mostly from the extreme South.

HENDERSONVILLE,

Henderson County, is a very favorite resort for visitors from South Carolina and States farther south. With its wide, level streets, its pure water, its temperate air and its charming scenery, it merits, as it has always received, its annual tribute of appreciation of those who come year after year to renew the pleasures and benefits of preceding experience. Adjoining Hendersonville, two miles to the south, is

FLAT ROCK,

A place properly to be designated as a South Carolina colony, selected more than half a century ago as a refuge from the deadly summer fevers of the coast. It was settled and adorned by families of wealth and refinement, whose tastes directed, and whose means constructed, that which is often conceived but rarely constructed—a true *rus in urbe*; elegant homes, separated from each other by grounds adorned with

*Since destroyed by fire.



LOOKING WEST FROM BLOWING ROCK BLUFF.

shrubby, by long winding avenues of the feathery white-pine, by drives, and also by prosaic fields of corn or grain. It is now a general rather than a special resort, under the strokes of war, which shattered fortunes and prostrated some social barriers. There is a good hotel at Flat Rock. This place is also on the Asheville and Spartanburg Railroad, and has its own convenient station.

BLOWING ROCK,

In Watauga County, is an overhanging precipitous mass on the very edge or crest of the Blue Ridge, on the very divide shedding the waters that gather on its top, a part to feed the streams that begin their course towards the Mississippi, and a part to trickle down into the affluents of the Yadkin. This elevation, 4,000 feet above sea-level, and being an advanced outpost of the Blue Ridge, commands wonderfully extensive and comprehensive views in all directions. Not only is the Grandfather Mountain (the highest and most majestic of all the Blue Ridge Mountains, a little less than 6,000 feet in height) in full view, but the endless succession of the summits of that chain, on the flanks and in the rear, while in front stretches the superb valley of the Yadkin and its numerous tributary valleys, beyond which rise the Brushy Mountains to lesser height, but with picturesque effect, thus relieving that unsatisfying flatness in the landscape so often experienced in looking over wide expanses from a superior height. Hanging Rock itself has a height of about 4,000 feet, but when it is surmounted there is found the often-repeated experience in the Blue Ridge of a greatly undulating surface and every temptation to occupy and enjoy it. Therefore, it is not strange that the temptation has been yielded to, and the summit of Hanging Rock is crested with dwellings and made hospitable with resting-places for the wayfarer. It has become one of the favorite resorts for the residents of North Carolina towns, for it is not far to reach, and it has equal advantages with all others in the command of the grandest and most beautiful of mountain scenery, the enjoyment of the purest and most invigorating air, and a happy liberation from the fetters of fashion. The resort is reached by stage over a turnpike from Lenoir, twenty-four miles distant, which place is the northern terminus of the Chester and Lenoir Narrow-Gauge Railroad, and connecting Lenoir with the Western North Carolina at Hickory, twenty miles distant. The ascent up the mountain is by an easy, safe and well-graded road. Not far from the Rock a company has erected the

GREEN PARK HOTEL,

Large and commodious, its comforts and its management in harmony with its magnificent surroundings. The air up there is remarkably pure and invigorating, and the water used in the hotel and other points is drawn from two springs, one of which pays its little tribute to the Yadkin, which becomes the Great Pee Dee, and the other into New River, which grows into the Great Kanawha, which passes into the Ohio.

LINVILLE

Is a new resort on Linville River, in Watauga County, on the top of the Blue Ridge and among its grandest scenery, close to the Grandfather, not far from the still loftier Roan. In such a location, it is superfluous to speak of the charms of Linville, for they are the possession of the whole mountain region, with the exception that here perhaps they are disposed and displayed to unusual advantage. A fine hotel is ready to receive all visitors. Linville is reached by way of Blowing Rock on the south, or by the Cranberry Railroad and stage from the north.

CLOUDLAND HOTEL,

In Mitchell County, 6,342 feet above the level of the sea, is on the very top of the Roan Mountain, and is unquestionably the most loftily situated first-class hotel in the United States east of the Mississippi. It is kept open during the summer, and its dry invigorating air is thought to be serviceable in hay-fever. The prospects from the summit are illimitable. The top of the Roan is, for seven miles in length, a prairie, covered with grass, wild flowers and peculiar shrubbery, and rambles over it are much enjoyed. Cloudland is reached by a narrow gauge railroad from Johnson City, Tenn., to Cranberry, N. C., and thence by stage by a graded road to the top of the mountains.

HIGHLANDS,

In Macon County, another favorite resort, is, like Blowing Rock, situated near the southern verge of the Blue Ridge, at an elevation of nearly 4,000 feet, and commanding a boundless prospect to the south and east. The mountains break down on their south faces in almost sheer precipices, that on Whiteside Mountain being 1,800 feet perpendicular, the highest precipice east of the Rocky Mountains. The air of Highlands, from its great elevation, is dry and exhilarating, and the place is much resorted to by the inhabitants of the Southern States. Highlands is a colony of Northern health-seekers, but the population is a blending of the two sections of the country.

SOUTHERN PINES,

In the south-west corner of Moore County, is also a colony of Northern health-seekers, but, in topography and location, the reverse of Highlands, the country being flat or only gently undulating—among the pine forests, and intersected by streams straggling through impenetrable marshes of cypress, gum, bay, maple and other swamp trees, but entirely free from malaria, the country being noted for the healthfulness of its people and the numerous instances of longevity. This character, and the well-known influence of the odors of the pine forest, induced its selection as a health resort, and a considerable body of Northern men, with their families, have there made their homes. Sev-



MOUNTAIN TROUT FROM THE LINVILLE.

eral thousand acres of land are owned by them, and very extensive peach orchards have been planted, very large vineyards established, the cultivation of small fruits undertaken, and the barren-looking pine woods have been completely transformed. Many handsome dwellings have been erected, churches, school-houses and hotels built; also workshops and factories. A very large hotel, designed in size and elegance to be the equal to any in the State, has been contracted for. It is becoming a large winter resort for Northern people, both for health and recreation. Southern Pines is situated on the line of the Raleigh and Augusta Air-Line Railroad, and is quickly accessible from every point.

Many towns in the State are becoming winter resorts for Northern visitors, and all of these towns have provided suitable hotels in which to entertain them. Winston has built the splendid Zinzendorff, than which there is no more elegant hotel in North Carolina—beautiful in architecture, complete in appointments, capacious in accommodation, luxurious in furniture and table, and superb in location. Greensboro, also the entertainer of many winter visitors, has the Benbow and McAdoo hotels; Raleigh has the well-known Yarbrough, and will soon have completed the capacious Park Hotel; Goldsboro has the well-known Humphrey House; Wilmington, the Orton and the Purcell; Rockingham, the Hotel Richmond; Fayetteville, the Hotel LaFayette; and Charlotte, the Buford, and the Central, with its superb annex, the Belmont, perhaps, of its capacity, the most elegantly furnished and the most luxuriantly and conveniently arranged of any hotel in the South.

If some omissions of resorts and hotels have been inadvertently made, the above enumeration will yet prove the existence of such a number of them as will certify to the progress of North Carolina in fields in which she was assumed to be deficient, and give assurance to the health- and pleasure-seekers that in every part of the State provision has been made for them.

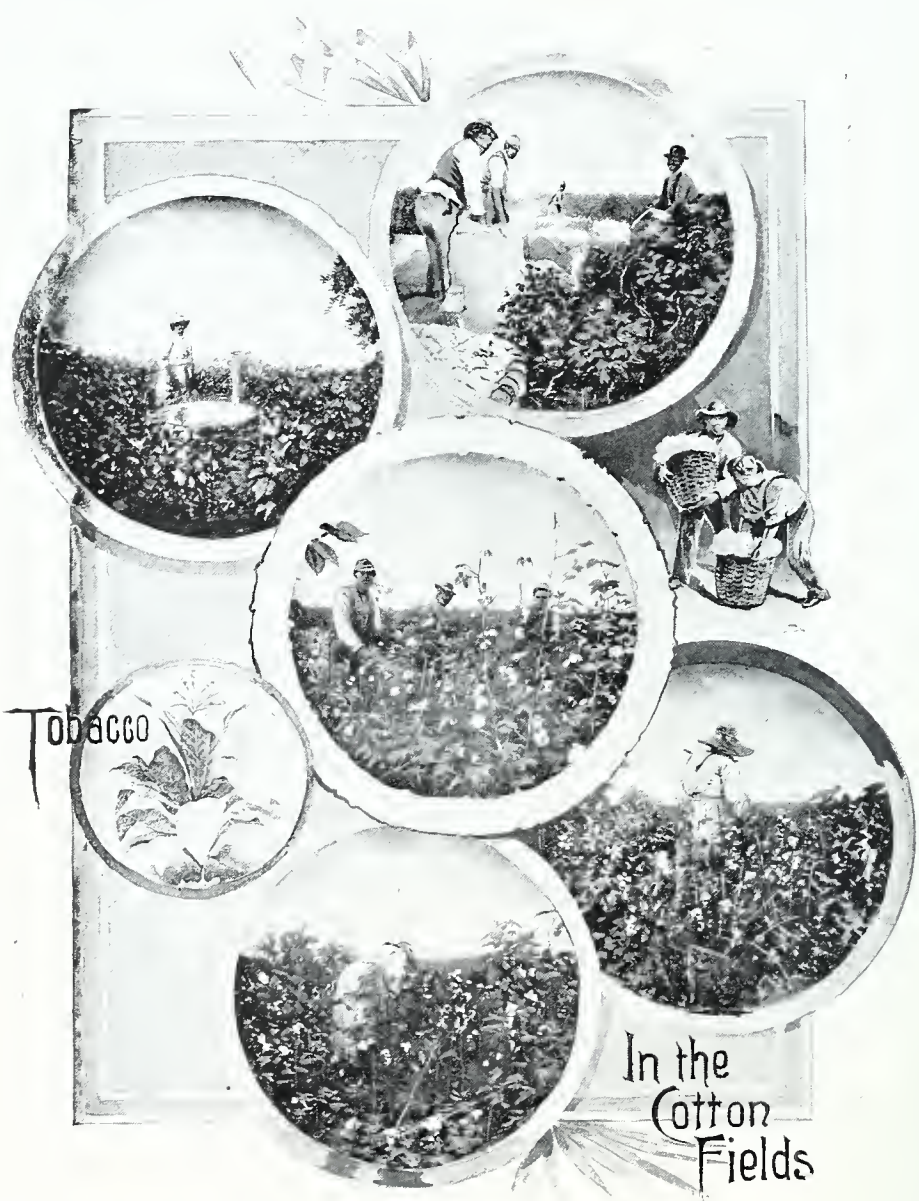
MANUFACTURES IN NORTH CAROLINA.

The existence in most parts of this State of abundant water-power, the abundance, value and variety of the raw material, and its proximity to favorable seats for its conversion into the manufactured fabric, and the natural aptitude of the people for mechanical industries, early made North Carolina foremost among the Southern States in the character of a manufacturing State. In iron she was usefully conspicuous during the revolutionary war. In the manufacture of textile fabrics she may be regarded as the pioneer in the South, her cotton factories antedating similar works in both Virginia and South Carolina—her factories, at the beginning of the late civil war, exceeding those of any State in the South. The war swept away most of the existing establishments, the invaders aiming to inflict a deadly blow upon the industries of the State as one of the surest steps at subjugation—perhaps with an eye also to the suppression of that rivalry which might grow formidable

after the restoration of peace, with the advantages possessed by the South in climate, in the cost of labor, in the economy of living, in the saving of the costs of transportation, and the more decided advantage in the proximity of the cotton fields to the factories. The almost universal destruction of the existing cotton factories was a stunning blow to North Carolina, but not a fatal one, for its force was the same as that inflicted upon all the other industries of the State, corporate and individual. In all of them recuperation began from the same dead level of universal ruin and disaster. The same hopeful look into the future, the same undaunted courage in accepting calamity, the same indomitable energy in the retrieval of losses, the same steady determination to persevere against the most formidable obstacles which make up the North Carolina character, had splendid illustration when the restoration of constitutional government and the restoration of wise financial systems made it possible to engage again in those industrial pursuits demanding the application of capital and the possession of the necessary skill. And the increase of the manufacture of cotton is so great as to have become a prominent feature in the industrial history of the State. One feature is not to be overlooked: it indicates a change in systems and habits only to be wrought by the stern lessons of adversity, and must be accepted as one of the undreamed-of blessings which sometimes are enforced by the teachings of war. Once it was that all the skill of managers, superintendents and machinists was introduced from the Northern factories. The instances were rare when a young Southern man applied himself to the acquisition of the necessary skill and experience to take charge of a factory. Now young men of the South make no hesitation in stepping on the lowest round of the ladder and ascending, by gradual but steady step, to the topmost round, qualified to take charge of all the intricate and complex details of a business for which the habits of the South once pronounced them inapt or disqualified by social position. Northern skill and experience are not discarded or excluded, but real industrial independence is only attained where those who engage in enterprises involving the problems of success or failure are themselves capable of conducting them. Thus it has come to pass that, from the seaboard to the mountains, by the use of steam or water-power, cotton factories are established, created by home capital, in large measure conducted by home skill.

The motive-power applied is either water or steam. Of the former the aggregate is about 3,500,000 horse-powers. Professor Kerr said that "if the whole of this were employed in manufacturing, it would be adequate to turn 140,000,000 spindles. The water-power of North Carolina would manufacture three times the entire crop of the country, whereas all the mills on the continent only spin one-quarter of it. Putting the crop of the State at 400,000 bales, she has power to manufacture fifty times that quantity."

The choice between water-power and steam is determined by the comparative economy in the use of either the one or the other. In many cases there will be no hesitation in the adoption of the first, for natural conditions at once emphasize the decision. At the falls of the



Tobacco

In the
Cotton
Fields

Roanoke, of the Tar River, on the rapid declivities of Haw and Deep Rivers, on never-failing streams in Cumberland and Richmond Counties, on the enormous forces of the two Catawbias, and perhaps elsewhere, a second thought would never be given to the application of any other power than that so exhaustlessly provided by nature and so easily and economically controlled. Elsewhere steam offers itself as the ready and convenient agent in such convenient form that the location of a new factory is rather made subservient to the convenience of transportation than to the character of the power to be applied; and thus it is that cotton factories are found everywhere in operation in the State, on the flat lands and by the sluggish waters of the eastern section, along the bold streams and the abundant water-falls in the middle section, or on the more turbulent torrents of the mountain region.

In 1870 the census reported thirty-three establishments, which was less than before the war. In 1880 the number had increased to forty-nine. At present the number, as nearly as can be ascertained, is as follows. Among these are not included a considerable number now in course of construction:

COTTON MILLS IN NORTH CAROLINA.

COUNTY.	NAME OF MILL.	OWNER OR MANAGER.	POST-OFFICE.
Alamance	Alamance Mill	E. M. Holt & Son	Burlington.
Alamance	Aurora	L. S. Holt	Burlington.
Alamance	Carolina	J. H. & W. E. Holt	Burlington.
Alamance	Glencoe	W. E. & J. H. Holt	Burlington.
Alamance	E. M. Holt Plaid	W. A. Erwin, Manager	Burlington.
Alamance	Elmira	W. L. & E. C. Holt	Burlington.
Alamance	Windsor	J. H. & R. L. Holt	Burlington.
Alamance	Altamahaw	Holt, Grant & Holt	Elon College.
Alamance	Belmont	L. B. & L. S. Holt	Graham.
Alamance	Big Falls	Julius H. Hardin, Man'gr	Big Falls.
Alamance	Saxapahaw	White, Williamson & Co.	Saxapahaw.
Alamance	Swepsonville	Falls of Neuse Mfg. Co.	Swepsonville.
Alamance	Granite Mills	Thomas M. Holt	Haw River.
Alamance	Ossipee	J. W. Williamson & Son	Elon College.
Alamance	Sidney	Scott, Donnell & Scott	Graham.
Alamance	Oneida	L. B. Holt	Graham.
Alamance	Snow Camp	Dixon & Dixon	Snow Camp.
Alamance	Graham Cotton Mills	J. S. Scott, Secretary	Graham.
Alamance	Clover Orchard	W. A. Willard, President	Clover Orchard.
Alexander	Taylorsville Mills	Alspaugh Bros	Taylorsville.
Alexander	Cotton Mills	J. L. Davis & Co.	Stony Point.
Anson	Wadesboro Mills	W. J. McLendon	Wadesboro.
Buncombe	C. E. Graham Mills	E. C. Barnhardt, Supt.	Asheville.
Bertie	Harden Mills		Windsor.
Burke	Dunavant	Dunavant & Reid	Morganton.
Cabarrus	Odell Mfg. Co	J. M. Odell, President	Concord.
Cabarrus	Cannon Mfg. Co.	J. W. Cannon, Secretary	Concord.
Caldwell	Patterson's Mills	Gwyn, Harper & Co.	Patterson.
Caldwell	Granite Falls	Granite Falls Mfg. Co.	Granite.
Catawba	Monbo Mfg. Co.	C. L. Turner	Monbo.
Catawba	Newton Cotton Mills	W. H. Williams	Newton.
Catawba	Maiden Cotton Mills	H. F. Carpenter & Son	Maiden.
Catawba	Providence Cotton Mills	H. F. Carpenter & Son	Maiden.
Catawba	Long Island Mills	James Brown	Monbo.

COTTON MILLS IN NORTH CAROLINA—CONTINUED.

COUNTY.	NAME OF MILL.	OWNER OR MANAGER.	POST-OFFICE.
Catawba	Granite Mfg. Co.	Granite Mfg. Co.	Hickory.
Catawba	Wilson's Cotton Mills.	Rankin & Son.	Maiden.
Chatham	Odell Mfg. Co.	Odell Mfg. Co.	Bynum's.
Cleveland	Belmont Mills.	Miller Bros.	Shelby.
Cleveland	Morgan Falls Co.	Morgan, Cline & Co.	Double Shoal.
Cleveland	Laurel Mills.	H. S. Miller.	Shelby.
Cleveland	Cleveland Mills, No. 1.	H. F. Schenck.	Cleveland Mills.
Cleveland	Cleveland Mills, No. 2.	H. F. Schenck.	Cleveland Mills.
Cleveland	Kings Mountain Co.	Kings Mountain Co.	Kings Mountain.
Columbus	Ornith.	J. H. Chadbourn, Jr.	Chadbourn.
Cumberland	Manchester Mills.	J. F. Clark.	Manchester.
Cumberland	Fayetteville Mills.	A. A. McKethan, Treas.	Fayetteville.
Cumberland	Hope Mills, No. 1.	H. C. Gadsby, Treas.	Fayetteville.
Cumberland	Hope Mills, No. 2.	H. C. Gadsby, Treas.	Fayetteville.
Cumberland	Cumberland.	O. A. Robbins.	Cumberland.
Cumberland	Bluff Mills.	Needham Holmes.	Fayetteville.
Davidson	Wennonah Mills.	W. E. Holt.	Lexington.
Durham	Durham Cotton Mills.	Odell & Co.	Durham.
Durham	Commonwealth Mills.	Corporation.	Durham.
Durham	Willard Mfg. Co.	W. H. Willard.	Willardsville.
Edgecombe	Tarboro Cotton Mills.	A. M. Fairley.	Tarboro.
Forsyth	Arista Cotton Mills.	F. & H. Fries.	Salem.
Forsyth	Winston Cotton Mills.		Winston.
Franklin	Laurel Cotton Mills.	Col. J. F. Jones.	Laurel.
Gaston	Lowell Bluff Mills.	J. A. Thompson & Co.	Mount Holly.
Gaston	A. P. Rhyne Mfg. Co.	A. P. Rhyne.	Mount Holly.
Gaston	Tuckaseegee Mills.	A. P. Rhyne.	Mount Holly.
Gaston	Albion Mfg. Co.	W. T. Love.	Mount Holly.
Gaston	Nims Mfg. Co.	E. C. Hutchinson, Sec.	Mount Holly.
Gaston	Mountain Island Mills.	W. T. Jordan.	Mountain Island.
Gaston	Stonesville Mills.	Thomas Gaither.	Belmont.
Gaston	McAden Mills.	R. R. Ray, Secretary.	McAdensville.
Gaston	Gastonia Mills.	George Gray.	Gastonia.
Gaston	Harden Mfg. Co.	Oscar Carpenter.	Harden.
Gaston	Woodland Mfg. Co.	Rush Smith, Manager.	Lowell.
Gaston	Laurence Mfg. Co.	Rush Smith, Manager.	Lowell.
Gaston	Cherryville Mfg. Co.	T. F. Rhodes.	Cherryville.
Gaston	Laboratory Mills.	D. F. Rhyne & Co.	Lowell.
Gaston	Willowbrook Mfg. Co.	Blair Jenkins, Secretary.	Lowell.
Gaston	Dallas Mfg. Co.	J. W. Puett.	Dallas.
Gaston	Stanly Creek Mfg. Co.	F. L. Pegram, Secretary.	Stanly Creek.
Guilford	Empire Plaid Mills.	O. S. Causey.	High Point.
Guilford	Minneola Mfg. Co.	Heath & Co.	Gibsonville.
Guilford	Oakdale Cotton Mills.	James Ragsdale, Sec.	Jamestown.
Guilford	Greensboro Cotton M'ls.	Hal. M. Worth, Sec.	Greensboro.
Guilford	Mt. Pleasant Mfg. Co.	W. M. Kline, Secretary.	Brick Church.
Guilford	Mt. Pleasant Mfg. Co.	W. M. Kline, Secretary.	Liberty.
Guilford	Crown Mills.	R. E. Causey.	Greensboro.
Guilford	Mt. Pleasant Mfg. Co.	W. M. Kline.	Klineville.
Halifax	Scotland Neck Cot. M'ls.	N. B. Josey, President.	Scotland Neck.
Iredell	Eagle Mills.	William J. Colvert.	Eagle Mills.
Iredell	Turnersburg Cot. Mills.	M. Steele.	Turnersburg.
Iredell	Nicholson's Mills.	T. A. Nicholson & Son.	Nicholson's Mills.
Lincoln	Elm Grove Mills.	R. S. Rhinehart, Sec.	Lincolnton.
Lincoln	Laboratory Mills.	D. F. Rhyne & Co.	Lincolnton.
Lincoln	Willow Brook Mills.	B. H. Sumner, Manager.	Lincolnton.
Lincoln	Machpelah Mills.	Reinhardt & Son.	Reinhardt.
Lincoln	Delmar Mills.		Lincolnton.
Lincoln	Dry Shoals Mills.		Lincolnton.

COTTON MILLS IN NORTH CAROLINA—CONTINUED.

COUNTY.	NAME OF MILL.	OWNER OR MANAGER.	POST-OFFICE.
Mecklenburg	Victor Cotton Mills	R. M. Oats, President	Charlotte.
Mecklenburg	Ada Cotton Mills	J. L. Brown, President	Charlotte.
Mecklenburg	Alpha Cotton Mills	E. P. K. Osborne, Pres	Charlotte.
Mecklenburg	Charlotte Cotton Mills	Oats Bros	Charlotte.
Mecklenburg	Pineville Cotton Mills	John E. Yount, President	Pineville.
Mecklenburg	Carolina Cotton Mills	R. J. Staugh	Davidson College.
Mecklenburg	Virginia Cotton Mills	A. J. Derr, President	Huntersville.
Mecklenburg	Cornelius Mills	C. W. Johnston, Pres	Davidson College.
Mecklenburg	Linden Mfg. Co	S. R. Neal	Davidson College.
Montgomery	Yadkin Falls	T. C. Ingram	Milledgeville.
Montgomery	Swift Island Mills	C. A. Armstrong, Man	Swift Island.
Moore	Jonesboro Cotton Mills	L. Acree, President	Jonesboro.
Nash	Rocky Mount Mills	Thos. H. Battle, Pres	Rocky Mount.
New Hanover	New Hanover Cot. M's	W. A. French, President	Wilmington.
Pasquotank	Fowler Cotton Mills	S. S. Fowler	Elizabeth City.
Randolph	Staly Cotton Mills	Thomas Hinshaw	Staly.
Randolph	Randleman Cotton M's	John H. Ferree	Randleman.
Randolph	Naomi Falls Mfg. Co.	John H. Ferree	Randleman.
Randolph	J. M. Worth Mfg. Co.	Dr. J. M. Worth	Asheboro.
Randolph	Worth Mfg. Co.	F. L. Emery, Supt.	Central Falls.
Randolph	Franklinville Mfg. Co.	O. R. Cox	Cedar Falls.
Randolph	Randolph Mfg. Co.	Benjamin Moffitt	Franklinville.
Randolph	Columbia Mfg. Co.	Hugh Parks	Franklinville.
Randolph	Enterprise Mfg. Co.	J. A. Cole	Coleridge.
Randolph	Powhatan Mills	C. E. Randleman	Randleman.
Randolph	Island Ford Mills	Hugh Parks, Manager	Island Ford.
Randolph	Plaidville Mills	J. O. Pickard	Randleman.
Randolph	Empire Mills	Empire Mill Company	Empire.
Richmond	Richmond Mills	Malloy & Morgan	Laurel Hill.
Richmond	Ida Cotton Mills	Malloy, Morgan & Co.	Laurel Hill.
Richmond	Midway Cotton Mills	T. C. Leak	Rockingham.
Richmond	Ledbetter Cotton Mills	John Ledbetter	Rockingham.
Richmond	Roberdell	R. L. Steele	Rockingham.
Richmond	Pee Dee Mfg. Co.	W. L. Steele	Rockingham.
Richmond	Great Falls Mfg. Co.	W. L. Everett	Rockingham.
Rockingham	Leaksville Cotton Mills	J. Turner Morehead	Leaksville.
Rockingham	Reidsville Cotton Mills	S. H. Boyd, Secretary	Reidsville.
Rowan	Salisbury Cotton Mills	J. M. Knox, Manager	Salisbury.
Rowan	Vance Cotton Mills	N. B. McCandless	Salisbury.
Rutherford	Henrietta Cotton Mills	Tanner & Co.	Henrietta
Rutherford	Forest City Mills	Dr. G. E. Young & Co.	Forest City.
Surry	Elkin Cotton Mills	R. B. Gwyn & Co.	Elkin.
Surry	Laurel Bluff Cot. Mills	A. J. Thompson	Mount Airy.
Surry	Green Hill Cotton Mills	W. A. Moore	Mount Airy.
Union	Monroe Cotton Mills	C. N. Sampson, Sec	Monroe.
Wake	Raleigh Cotton Mills	Julius Lewis, President	Raleigh.
Wake	Caraleigh Cotton Mills	F. O. Moring, Secretary	Raleigh.
Wilson	Wilson Cotton Mills	A. Branch	Wilson.

In all, 140 cotton mills in operation, and a number under construction, among which are the Pilot Mills in Raleigh, the mills of the Dallas Manufacturing Company at Dallas, the Erwin Mills at Durham, a mill at Winston to move 20,000 spindlers, one at Charlotte and one at Haw River—in all, 140 in operation and six known to be under construction. The number of looms at present, as nearly as has been ascertained, is 9,128; spindles, 506,324. Number of bales cotton consumed by factories in North Carolina, 165,200.

The counties having the greatest number are Alamance, with 19; Gaston, with 17; Randolph, 13; Mecklenburg, 9; Catawba, 7; Cumberland, 6; Cleveland, 6; Lincoln, 6; Guilford, 8; Richmond, 7.

WOOLEN MILLS.

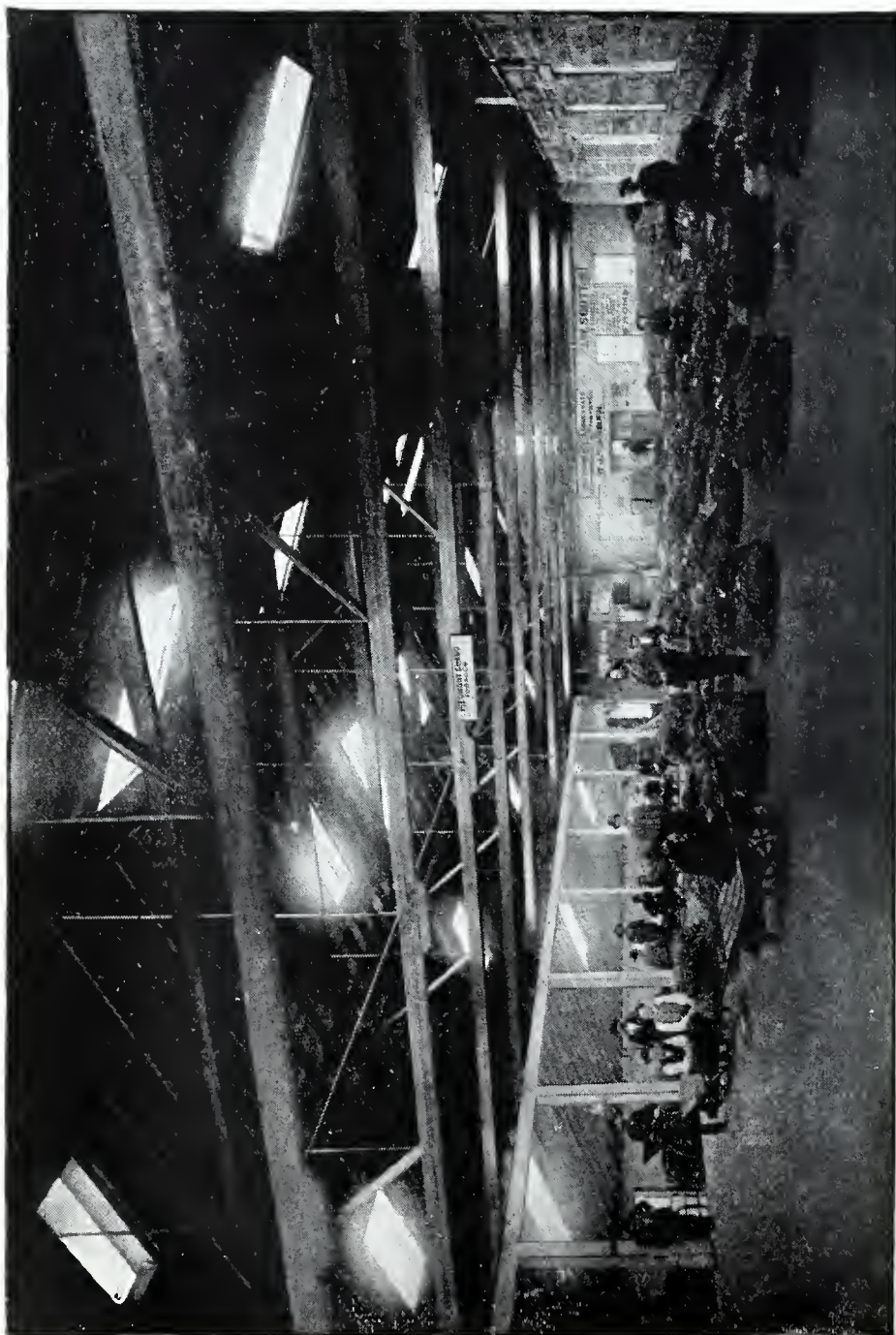
This is an industry that has not expanded as has that of cotton manufacture, nor does it give promise of doing so, since sheep husbandry is an industry that is impeded by several causes, chief of which is the depredation on the flocks committed by dogs, which public opinion continues to favor; so that what are known as "dog laws," or "bills for the encouragement of sheep husbandry," are periodically laughed into oblivion as often as they are presented and discussed in the General Assembly of the State. Many parts of the State, by soil, climate and vegetation, are admirably suited to such industry, but flocks do not increase, and the annual clippings find their way into neighboring carding mills, thence to be converted by the domestic hearth into the clothing of the hardy people of the country, rather than to the large factories which might illustrate the industrial skill and enterprise of North Carolina manufacturers, which is done (but not by the home product) by factories whose fabrics make favorable comparison with the choicest fabrics of the Northern looms. Thus the fine mills at Salem and at Elkin, and elsewhere, draw their supplies of raw material mainly from Georgia and other States, rather than from North Carolina, thus emphasizing the blindness of the folly which persists in favoring the destructive dog at the expense of the productive sheep.

The census of 1870 reported 52 establishments operating in the State for the manufacture of wool, operating 97 looms and 2,806 spindles. This enumeration included not only what are known as factories, but also all the local carding mills. The census of 1880 reported only 49 such establishments of all kinds. At present, excluding carding mills, there appear to be nine woollen mills proper, and four classed as cotton and woollen mills. All of these employ large capital and represent much of skill and enterprise. These establishments are as follows:

WOOLEN MILLS.

COUNTY.	FACTORY.	POST-OFFICE.	LOOMS.	SPINDLES.
Alamance	Snow Camp Mills	Snow Camp	----	----
Ashe	Helton Manufacturing Co	Helton	----	----
Ashe	Pioneer Woollen Mills	Creston	----	----
Buncombe	Reems Creek Woollen Mills	Weaverville	5	210
Caldwell	*Patterson Factory	Patterson	17	500
Forsyth	Arista Mills	Salem	38	648
Haywood	Haywood Woollen Mills	Waynesville	----	----
Lincoln	*Willow Brook Mills	Lincolnton	----	----
Richmond	*Hamlet Mills	Hamlet	6	200
Rockingham	*Leaksville Mills	Leaksville	6	240
Rutherford	Rutherford Woollen Mills	Forest City	----	----
Surry	Green Hills Woollen Mills	Mount Airy	10	450
Surry	Elkin Woollen Mills	Elkin	10	720

* Woollen and cotton mills.



SELLING TOBACCO IN WAREHOUSE.

The product of the Arista Mills at Salem consists largely of fine cassimeres, and also jeans and kerseys. The former have a beauty of finish and a fineness and firmness of texture which place them on equality with similar goods anywhere in the country. Elkin is noted for the superiority of its blankets, which are only surpassed by those of California.

TOBACCO FACTORIES.

This most important industry has had more influence in this State than any other—perhaps than all other manufacturing industries combined—to stimulate energy and enterprise, and certainly more than any other has contributed to the increase and activity of urban population, and, in fact, to the creation of new towns, as illustrated especially in striking degree in the growth of Durham, Winston, Reidsville and, to less extent, of some other places.

Something has been said elsewhere of the tobacco interest of the State. A few examples of operations will be given here as typical illustrations; but in the main, from limitation of space, it is necessary to confine the subject chiefly to a list of the factories now in operation, with the qualification that it may be only approximately complete, owing to the difficulties of obtaining fully accurate information. The list is as follows:

Buncombe has 1 plug factory; Alexander, 1; Caldwell, 1; Caswell, 3; Catawba, 1; Cleveland, 1; Davidson, 4; Durham, 3; Davie, 12; Forsyth, 39; Guilford, 4; Hertford, 1; Iredell, 6; McDowell, 2; Madison, 1; Orange, 1; Person, 11; Rockingham, 10; Rowan, 4; Stokes, 5; Surry, 6; Vance, 2; Wake, 2; Wilkes, 2; Yadkin, 3—a total of 110.

Of smoking factories Buncombe has 2; Durham, 4; Orange, 1; Rockingham, 1; Rowan, 1—a total of 9.

Of cigarette factories Buncombe has 1; Durham, 1; Vance, 1.

It may be interesting to illustrate the business of the tobacco markets in the State, but, owing to the absence of responses to inquiries made, it is impossible to give details only in cases of such responses.

DURHAM has four tobacco sales warehouses, at which the aggregate sales of tobacco for the year ending December 1, 1891, was 11,650,248 pounds.

Of smoking tobacco it has five factories—Blackwell's Durham Coöperative Tobacco Company; W. Duke, Sons & Company, branch of the American Tobacco Company; R. T. Morris & Sons Manufacturing Company, snuff and smoking; Z. I. Lyon & Co. and the Faucett Tobacco and Snuff Company, plug and smoking.

Of plug factories there are three—the J. Y. Whitted Manufacturing Company, Swift & Brown, and the Farmers' Alliance Manufacturing Company.

Of cigarettes the W. Duke & Sons branch of the American Tobacco Company is the largest, and one of the largest in this country. Its output embraces by far the greatest quantity of cigarettes made in Durham, as does the Blackwell Smoking Tobacco Company supply the greatest amount of smoking tobacco.

The manufactures of Durham for the year 1891 include 626,200,000 cigarettes; tobacco (plug and smoking), 4,865,835 pounds; cigars, 2,263,250; snuff, 71,500 pounds.

There were exported to foreign countries in 1891 — cigarettes, 141,555,550; manufactured tobacco, 57,385 pounds; leaf tobacco, 1,981,511 pounds.

The B. L. Duke Bonded Leaf Warehouse, three stories, 70 x 200 feet, has a capacity of 5,000 hogsheads.

There are numerous prizehouses or leaf factories.

The revenue collected at Durham on the products of tobacco was \$616,129.85.

WINSTON has four sales warehouses, in which, during 1891, there were sold 16,086,373 pounds, with a value of \$1,612,669. The factories, in addition, bought for their use in other markets 4,200,000 pounds of leaf. Of manufactured tobacco there were sold last year upwards of 11,000,000 pounds. The revenue paid was \$660,405.52. There are twenty-seven plug factories in Winston, all large brick buildings, from three to six stories in height and from 125 to 250 feet in length. There are numerous prize or leaf factories.

SALEM, adjoining Winston, has three or four large plug factories.

GREENSBORO has three warehouses, with annual sales of about three and a half million pounds. It has two plug factories, the annual output of which is estimated at 300,000 pounds, and ten leaf factories or prizehouses.

HENDERSON, in Vance County, has four sales warehouses, with sales for 1891 of 12,000,000 pounds. There are fifty-three leaf dealers in the town. There is only one plug factory—that of the Burgwin Brothers, whose output last year was 175,000 pounds, upon which a revenue tax of \$10,500 was paid; and there are two smoking tobacco factories, of whose operations no information was obtained.

WILSON.—This is a new market, the extensive cultivation of fine tobacco in that section having been only recently undertaken. There are no factories as yet, but there are two sales warehouses—the “Planters,” by Anderson & Jones, and the “Wilson,” by Pace & Woodard. The sales for 1891 were a little over 3,000,000 pounds, averaging 9.18 cents per pound. A smoking tobacco factory will be opened during this year.

ASHEVILLE has four sales warehouses. This is a comparatively new market, the cultivation of tobacco having been extensively engaged in within the past ten years. In 1880 the sales were only 100,000 pounds; in 1883-'84, 2,423,662 pounds, and thus far in the season of 1891-'92, 5,277,517 pounds.

The Asheville Tobacco Works combines the different manufactures of plug and smoking tobacco and cigarettes. Its operations in each are on a large scale, and its reputation for good work and the extent of its business justifies the expectations that tobacco manufacturing can be carried on as successfully west as east of the Blue Ridge. It may be remarked of this factory that its motive power is electricity, in this respect standing alone.

There are in Asheville two smoking tobacco factories.

WOOD-WORKING ESTABLISHMENTS

Include several branches of industry, all of which will be referred to. The great quantity of timber in North Carolina, its great variety and applicability to various uses, and its general diffusion, would naturally suggest its conversion into forms demanding skill and the use of capital, independent of those ruder applications within the compass of the most unskilled labor. It is no source of pride to North Carolina that to the latter is still left so much of the uses of its exuberant timber supply, and that so vast a proportion of it still goes abroad as raw material, to be returned to her people as the finished product, not only in the finer and costly fabrics of furniture and pleasure vehicles, but even in the humiliating and reproachful forms of the very axe-handles used by her people to hew down her own trees.

Yet a change is going on, and the lesson of self-dependence is being learned; for our people, if they are without thrift, are not without skill and industry; and, as the manufacturing instinct is developed, they will cease to look exclusively to the skill of the Northern wood-worker as they are gradually freeing themselves from the absolute dominion of the Northern and European cotton manufacturer. To illustrate this tendency, the following list of what may be viewed as the seats of skilled labor, may prove encouraging. In the front rank of these may be classed

THE MANUFACTURE OF CARRIAGES AND BUGGIES.

Of these, Alamance County has 2, Alexander 2, Ashe 1, Beaufort 1, Bertie 3, Caldwell 1, Chatham 1, Cleveland 1, Cumberland 2, Davidson 2, Durham 1, Forsyth 6, Gates 2, Guilford 1, Haywood 1, Halifax 1, Hertford 3, Lenoir 2, Lincoln 2, Moore 2, Pasquotank 1, Randolph 2, Sampson 2, Vance 1, Wake 1, Warren 3, Washington 3, Wilkes 2, Wilson 1, Yadkin 4—in all, 57; established in 30 out of the 96 counties of the State, and representing every section of it. Among them there is wide range of excellence, defined and governed largely by time and experience. Many of them are new—the product of the new industrial evolution. A few are old, and are meritorious, not only for the character of work done by them, but because of the courage and foresight which gave them existence far in advance of similar enterprises in the State. The oldest, largest and most celebrated for the excellence of its work and good taste and elegance of construction is that established in Fayetteville in 1832 by Gardner & McKethan, continued by A. A. McKethan until his death, and now conducted under the name of McKethan Sons.

WAGONS, ETC.

Not less important, and of much wider application, is the manufacture of wagons, carts, etc., conducted by 32 different establishments in almost the same number of counties, as follows: Alamance has 1,

Alexander 2, Anson 3, Cabarrus 1, Caldwell 1, Catawba 1, Chatham 1, Clay 1, Cleveland 1, Cumberland 2, Davie 1, Durham 1, Gaston 1, Johnston 3, Montgomery 2, Pamlico 1, Pender 1, Rutherford 1, Surry 1, Stanly 1, Wake 3, Yadkin 1.

Among the oldest and largest of these is the factory at Waughtown, Forsyth County, three miles south of Winston, now conducted by George P. Nissen & Co. It was founded in 1834 by J. P. Nissen. The business is now conducted in two large brick buildings; the machinery is operated by steam; and the output is one hundred road and farm wagons per month, with such character for good workmanship as to find ready market throughout this and the States of Georgia, South Carolina and Virginia.

An establishment of similar magnitude and character exists at Hickory, the property of Mr. J. G. Hall, but particulars cannot be given. Of

FURNITURE FACTORIES,

There are 25, of which 1 is in Ashe, 3 in Buncombe, 1 in Davie, 2 in Forsyth, 1 in Gaston, 2 in Guilford, 1 in Henderson, 3 in Lincoln, 1 in Macon, 1 in Martin, 1 in Mecklenburg, 1 in Montgomery, 1 in Moore, 2 in Rowan, 1 in Surry, 1 in Wake, 1 in Wayne, and 1 in Yadkin. Of

HUBS, SPOKES AND HANDLES,

There are 6 factories, viz.: 1 in Bertie, 1 in Guilford, 1 in Mecklenburg, 1 in Montgomery, 1 in Rowan, 1 in Rutherford. Of

SASH, DOOR AND BLIND FACTORIES,

There are 24, viz.: In Buncombe 2, Burke 1, Cabarrus 1, Caldwell 1, Catawba 2, Davidson 2, Durham 1, Forsyth 1, Gaston 1, Guilford 3, Johnston 1, Rowan 3, Stanley 1, Surry 1, Wake 2, Wilkes 1.

Of another variety of wood-working factories is that at Newbern for the manufacture of plates and dishes made out of sweetgum, and also berry baskets.

At Wilmington is the somewhat similar establishment of the Industrial Manufacturing Company, of which Mr. John D. Bellamy is President and J. B. Brinson is Superintendent. This is operated by steam, and employs 125 people. The material chiefly used is gum logs, and the product is butter plates and baskets, berry baskets and crates, banana and fruit crates, etc. The products are chiefly sent to New York.

There are two large coffin factories—one at Burlington, the other in Yadkin County—the products of which are distributed through the Southern States.

Of the other simpler or ruder establishments for the conversion of the products of the forest, there are, as nearly as can be ascertained, in operation in the State 114 steam saw-mills, in addition to numerous water mills, 30 planing mills, 18 shingle mills, 80 turpentine distilleries—undoubtedly below the actual number; and, as largely connected with the products of the forest, a very large number of tanneries,

among the largest and best equipped of which is the one at Morganton, constructed and conducted on the most advanced scientific application of theory to intelligent practice.

PAPER MILLS.

Originally using only the waste of textile fabrics, the immensely increased consumption of paper demand other raw material, for the supply of which human ingenuity was heavily taxed. The additional material has been found in wood-pulp, mechanically or chemically prepared. The abundance in North Carolina of soft woods suitable for such purposes has led largely to the combination of wood-pulp with cotton, flaxen and hempen fibre; and the factories now in operation in the State are able to supply as good a material for book, printing and wrapping-paper as can be made elsewhere.

There are three principal paper mills in North Carolina—that at Salem, in Forsyth County; the Falls of Neuse, in Wake County; and the Tiddy Mills, at Long Shoals, in Lincoln. The product of these mills is bristol-board, writing-paper, book and news-paper, and wrapping-paper of all kinds.

KNITTING MILLS.

Among the recent manufactures introduced into North Carolina is that of cotton hosiery, made possible by the invention, or rather perfection, of knitting machinery, making ready response to the universal demand for an indispensable article of personal wear, providing easy and healthful employment to large numbers of females and children, and, with the ready and abundant supply of raw material, providing a good fabric at greatly reduced cost, and, in addition, breaking another chain of industrial dependence. The experiment of such enterprise is comparatively new, and the manufacture of hosiery has only recently been enrolled in the State statistics as an additional subject of employment, investment and profit. Without question, another decade will show a great increase in the number of these establishments for knit goods of all kinds, and of all applicable material.

At present there are knitting mills for the making of hosiery at the following places, viz.: At Pittsboro 1, Tarboro 1, Salem 1, Greensboro 1, Selma 1, Kinston 1, Salisbury 1, Raleigh 1; and at Elizabeth City a factory for the knitting of seines.

The labor employed is that adapted to the light nature of the work to be done, and, with the exception of such men as are needed in the direction of the business and the superintendence of the machinery, is done by women and children.

CANNERIES.

The discovery of the processes by which fruits, vegetables, meats and other common substances that provide human subsistence or add to human comfort or luxury, are canned, has conferred one of the greatest boons that has ever blessed humanity. It really marks an era in human progress, separating by distinct and emphatic lines that cheerless period

during which even the civilized races passed through the greater portion of their existence condemned to the monotonous use of the products of the grainfields, unvaried by the grateful succulence of fresh vegetables and juicy fruits, from the present days of enjoyment of the daily repasts over which the genial spring and the luxuriant summer preside in perpetual reign; and with the change comes not only comfort and pleasure, but health and the amelioration of much human discomfort and actual suffering. The seaman, on his long and trying voyages, cut off from land, confined to the stores he takes along with him, once constrained to "hardtack and salt junk," and the doomed victim to scurvy and other ailments incident to his sea diet, now, with his full supply of canned vegetables, fruits and fresh meats, no longer envies the happier landsman, but, on the troubled waters, may vividly renew the happy experience of his former life on land. The soldier, in his camp or on his march, draws from his tin garden grateful additions to the once repulsive army beef and insipid crackers; and the traveler, from the same magic storehouse, is independent of the hardships of his route, and goes on his way with perennial renewal of his vigor and his cheerfulness. And at home the good housewife has it in her power to hold unbroken the culinary links of the year and keep in living memory the summer blessings of the garden and the orchard. There is now no gap in the seasons, for command over them has been obtained and they stand subdued to human will and intelligence.

The revolution is a quiet one, but vast and important. It changes the modes of livelihood, it makes marked additions to health and comfort, it adds largely to prosperity; for it makes profitable that which was superfluous and perishable, it evokes new industries and stimulates new enterprises, it gives employment to a new and large class of artisans and laborers, and it has become an important factor in the affairs of commerce. It is not to be wondered at that the trade in "canned goods" has assumed such amazing dimensions or become of such tremendous importance; and this importance will not diminish so long as mankind retains his capacity to eat. It will rather increase, since so much is added to his comfort and to the gratification of his tastes, and the area of the consumption of canned products will enlarge in proportion to the expansion of the knowledge of this great modern revelation.

The adoption of this new industry by the people of this State has been slow and cautious, perhaps wisely so; but no State is so advantageously situated for the attainment of success. Vegetables of all kinds known to the temperate zone grow here in great perfection in all parts of the State, and the quantity for artificial preservation may be indefinitely increased. In the eastern section, so largely devoted to truck farming, there must always be an excess of production over the quantity needed for the early market, and this excess need neither be lost or wasted if canning is resorted to. In the middle and western sections, equally available for the culture and preservation of vegetables, superior conditions exist for the cultivation of fruits in greater variety and perfection, and in those sections the increase of the canning industry may be looked for.

There appear to be at the present time the following canneries for fruits and vegetables in operation, viz.: 2 in Alamance, 1 in Anson, 1 in Beaufort, 2 in Buncombe, 1 in Caldwell, 2 in Chatham, 1 in Cleveland, 1 in Davidson, 1 in Durham, 1 in Gaston, 2 in Guilford, 1 in Halifax, 2 in Henderson, 1 in Iredell, 2 in Pender, 2 in Richmond, 1 in Rowan, 3 in Rutherford, and 1 in Wayne—in all, 28.

OYSTER CANNERIES.

These are few in number. With an increased production of oysters under the new system of cultivation, and with the legal protection secured to private rights, it is possible the future will see a decided increase. At present there appear to be the following oyster canneries in the State, viz.: 1 in Brunswick, 2 in Carteret, 1 in Craven, 1 in Pamlico, and 9 in Pasquotank. That in Craven, at Newbern, is very extensive.

COTTON-SEED OIL MILLS.

With the thriftlessness once characteristic of the South, with disregard to the principles of economy which might be the suggestion of a plurality of profitable results from one product, or with the contempt for small industries as compared with the overshadowing proportions of the unrivalled staple of the reigning King Cotton, the incapacity of the cotton plant to yield anything but the fleece gathered in the fields was, until in recent years, generally conceded. The separated seed were roughly shovelled out into the open ground as so much waste, or to rot until in condition to be returned to the ground as manure for the next crop—a grudging compensation for heedless waste and thoughtless extravagance. The stalk, at some future day to be recognized for its value in its application to the manufacture of fibre or paper, is still left neglected where it grew, until in the coming spring it is rudely beaten down and turned under by the plow, with half incredulous concession that it may, in its decay, do no harm to the succeeding growth.

The fact that the cotton seed did contain a valuable oil was not unknown, and long ago the rude processes to which the seed in their natural condition were subjected made partial returns of a crude though useful oil. In the present age of economic and scientific research, prosecuted at a time when inventive genius was never so daring or so little thwarted by the difficulties which had appalled the past, the real value of the cotton seed began to be understood. Machinery was invented by which they were freed from the encasing and absorbing hull, the freed and oily kernel made ready for the press, and now the cotton grower finds in the once despised and rejected surplus of the cleaning process a substance in value bearing large proportion to the lint itself—an oil which enters largely into culinary and mechanical uses, a cake which has become an important subject as food for cattle, and a meal now beginning to be recognized as useful nutritious human aliment, and possibly in the hull itself a substance to be utilized in some profitable mode. In this cotton-seed oil production many millions of dollars have been invested in mills and machinery, a new and important mate-

rial added to the subjects of domestic and foreign commerce, and at home a ready and profitable market given to the farmers for that which was once wasted, or the value of which was only imperfectly realized,

The cotton crop of this State is, annually, from 325,000 to 375,000 bales. In the quantity of lint cotton required to make a bale of 500 pounds it is estimated that there are 800 pounds of seed, which is enough, if so applied, to furnish a large proportion of the mills now running in the United States.

In 1880 there were nine mills in operation in North Carolina. There appear at present to be 1 in Fayetteville, 1 in Wilmington, 1 in Charlotte, 2 in Tarboro, 1 in Raleigh, 1 in Washington, 1 in Newbern, 1 in Elizabeth City, 1 in Kinston, 1 at Gibson's in Richmond County, 1 in Laurinburg, 1 at Conetoe in Edgecombe County, 1 at Battleboro in the same county—a total of 14, with an average capacity of 20 tons per day.

FERTILIZER FACTORIES.

With the rapidly-increasing use of artificial fertilizers, and with the almost complete exhaustion of the natural supplies of the ammoniated guano from Peru and other sources, there has grown up imperative demand for the artificially-manipulated substitutes. For a considerable period after the Peruvian guano supplied the demand, the factories of Philadelphia, Baltimore and Richmond competed for the supply of the North Carolina farmers. Now the North Carolina manufacturers, if they do not control the market, are enabled to offer a very formidable competition; and, in the excellence of their product, stand, under rigid scientific tests, on equal footing with other States.

A number of the factories in this State compound their fertilizers for different applications. In naming the establishments these different uses will be noted. The following is a list published by the Agricultural Department of North Carolina in a recent Monthly Bulletin:

Acme Manufacturing Company, Wilmington—Latimer's Cotton Fertilizer, Acme Fertilizer, Acme Acid Phosphate, Gem Fertilizer.

B. J. Bell & Co., Beaufort—Fish Scrap.

Calder Brothers, Wilmington—Kainit

Charlotte Oil and Fertilizer Company, Charlotte—Charlotte Acid Phosphate, Charlotte Ammoniated Fertilizer.

Dey & Brothers, Beaufort—Fish Scrap.

M. Dundas, Jamestown—Bone Meal.

Durham Fertilizer Company, Durham—Progressive Farmer Guano, North Carolina Alliance Official Acid Phosphate, North Carolina Official Farmers' Alliance Guano, Durham Bull with Peruvian Guano, Durham Ammoniated Fertilizer, Durham H. G. Acid Phosphate, Kainit, Nitrate of Soda, Griffith Double Bone Phosphate.

Goldsboro Oil Company, Goldsboro—Prolific Cotton Grower.

E. H. & J. A. Meadows & Co., Newbern—Meadows' Special Guano for all Crops, Meadows' Special Guano for Cabbage, Fish Scrap, Kainit, Cotton Guano, Diamond Dissolved Bone, Special Potato Guano, Diamond Acid Phosphate.

Mammal Product Company, Hatteras—Ground Porpoise Bone, Ground Porpoise Meat Scrap.

Navassa Guano Company, Wilmington—Navassa Cotton Fertilizer, Navassa Guano, Navassa Acid Phosphate, German Kainit, Navassa Special Root Fertilizer for Early Truck, Navassa Truck Guano Soluble Ammonia, Navassa Grain Fertilizer.

Powers, Gibbs & Co., Wilmington—Gibbs & Co.'s H. G. Ammoniated Phosphate, Eagle's Island Ammoniated Guano, Sea Bird Ammoniated Guano, Cotton Brand Ammoniated Dissolved Bone, Bone and Potash Phosphate.

F. S. Royster & Co., Tarboro—Farmers' Bone Fertilizer, Farmers' Special Cotton Compound, Farmers' X X Acid Phosphate, Carolina Soluble Bone, Oronoco Tobacco Guano, Truckers' Delight, Cotton Seed Meal.

Reidsville Fertilizer Company, Reidsville—Broad Leaf Tobacco Guano, Acid Phosphate and Banner Fertilizer.

R. N. Sweet, Wilmington—Kainit.

Caraleigh Phosphate Mills, Raleigh—Eclipse Acid Phosphate and Kainit, North Carolina Ammoniated Phosphate.

Raleigh Oil Mills and Fertilizer Co.—Raleigh Standard Guano and Cotton Seed Meal.

PINE LEAF MANUFACTURES

And the preparation of CREOSOTED TIMBER until recently have been important industries in Wilmington and vicinity. The former were conducted at the Acme Mills, seventeen miles from Wilmington, in Columbus County. At this factory are made carpeting, material for mattresses, matting, and cotton-bagging, an application called into existence by the increase of duties on jute and jute bagging. In the process of manufacture, a valuable medicinal oil, known as pinoleum, is distilled. The creosoting establishment at Wilmington for the preparation of logs used in piling or for use in tropical waters where timber is subject to the attacks of the destructive *teredo navalis*, at one time was conducted with much activity, the prepared logs being in great demand in the West Indies and along the Mexican coast. The works are still operated, but apparently with less energy than in the past.

RICE MILLS

Are important in connection with the increased culture of the interior or upland rice. The number of these mills, which was four in 1880, has not increased, but rather diminished. At that period there were one at Wilmington, two at Newbern, and one at Goldsboro. Those at Newbern appear to have been discontinued.

BUCKET FACTORIES.

Of these there are two at Fayetteville. One of these is operated by A. A. McKethian, and produces cedar pails and churns, oaken well-buckets, etc. It is operated by steam. The other is the Fayetteville Bucket Factory, of which Dr. J. W. McNeil is President. This also is operated by steam. The business of these establishments is large, extending to many States, North and South. The material used for pails and churns is chiefly the juniper or white cedar, procured from the swamps of the adjacent country, and from its sweetness and its durability is preferred to any other brought in rivalry with it.

POTTERY, ETC.

The abundance of excellent material for the manufacture of brick, pottery, tiling and porcelain might have induced many years ago the inception of industries suggested by the possession of so much good material. There was, until the comparatively recent industrial revival, an indifference, except in the manufacture of brick and coarse pottery. For the best of these recourse was still had to Northern skill and energy. Now, our people are turning to the use of their own resources

and the application of their own skill, and are rapidly adding other victories in their achievement of industrial freedom.

Probably the most important establishment that came into existence under this new stimulus is the Pomona Terra Cotta Company, two miles west of Greensboro, of which J. Van Lindley is President and W. C. Boren Secretary and C. P. Boren Superintendent. The works are extensive and the operations comprehensive, including drain-pipe of all sizes, vitrified sewer-brick, farm drain-tiles, firebrick, etc. The brick, by careful analysis, presents remarkable qualities, and proves the equal of any found in the United States. This analysis shows: Silica, 62.02 per cent.; alumina, with a faint trace of iron, 25.06 per cent., and fractional percentages of magnesia, lime, soda, and potash. The firebrick has found great demand in and out of the State. So has the sewer and drain-pipe, and every other product of the factory. Three miles west of Morganton is an extensive tile and drain-pipe factory; and at Biltmore, two miles from Asheville, are the extensive tile, drain-pipe and brick works of George Vanderbilt.

KAOLIN.

From the decomposition of feldspar in the older rock formations in North Carolina has resulted long seams or beds of this material, so finely applicable, as found in some localities, to the manufacture of the better qualities of porcelain. It is found in large quantities in Guilford County, near Greensboro; in Johnston County, near Clayton, and in Chatham, and other counties. But perhaps the most extensive and valuable veins or deposits are found among the mountains, from Mitchell to Cherokee. In only one—Jackson—has there been any effort made to use it. Extensive beds of kaolin are found in the hills bordering upon Savannah Creek and in the vicinity of Webster; and at Dillsboro, at the mouth of Scott's Creek, and at Sylva, two miles above, extensive works have been erected for the preparation and refinement of the material for the use of the pottery and porcelain works in New Jersey. Articles made from the kaolin of Jackson County show a beauty and transparency of texture and a durability of fabric equal to any similar material found in the United States.

AGALMATOLITE,

Frequently called soapstone, differs from soapstone, known west of the Blue Ridge as talc, in having in its composition only a small percentage of magnesia, that element being replaced by alumina. Agalmatolite is found in large quantities on Deep River, in Chatham County, of fine grain and a variety of beautiful, delicate colors—pink, blue, white—and at one time was reduced to powder in large quantities and sent to the Northern factories to be used in the manufacture of paper—writing and wall—soaps, cosmetics, pencils, etc., and also perhaps for the adulteration of sugar, candies and confectioneries.

TALC

Is found in large quantities in Macon along the banks of the Nantahala River, and in Cherokee in the valley of Valley River, and on the

banks of Nottely River, where, from the whiteness and softness of the texture, it is locally known as Cotton Rock. The Nottely talc has for some years past been extensively quarried and sent North *via* Atlanta, for the uses above ascribed to agalmatolite. That of Valley River and of the Nantahala is firmer in texture, of a translucent pearly-colored appearance; and on the latter stream a large mill is in operation for its reduction to impalpable powder, which is also sent North for many uses. It is also formed into tips for gas-burners, pencils, and other forms. The quantity is inexhaustible.

BARYTES

(Sulphate of baryta) is found in large quantities in the mountains along the French Broad River in Madison County, and, in a mill on Spring Creek, at Hot Springs, is ground into fine powder, and is then in condition to acquire some of the uses of talc and agalmatolite, though probably its largest use is as a substitute for zinc in the manufacture of white paints.

These mineral substances are named here as connecting themselves naturally in the topic of manufactures with the clays and other substances entering into manufacturing industries; corundum, asbestos and mica may find place elsewhere.

IRON MANUFACTURES.

The census of 1880 records twenty establishments for the manufacture of iron and steel as then existing. They were named without classification or discrimination. As there are large machine-shops, railroad shops, agricultural implement works and other kindred works almost everywhere in the State, the number of these is certainly greater now than then.

Of the varieties of manufactures, there is to be found the edge-tool manufactory of Walter Watson at Fayetteville, for the manufacture of the various tools used in the gathering of turpentine, and from which the supply is obtained for most of the "turpentine orchards" throughout the South; also, at the same place, McMillan Brothers, manufacturers of turpentine stills, the largest establishment of the kind in the South, with a branch at Savannah, Ga., from which the trade everywhere is supplied. Large agricultural implement works are in operation at Tarboro, Raleigh, Goldsboro, Mount Holly, and Bost's Mills, in Cabarrus County; two foundries at Salem, one in Catawba, one at Hendersonville, one at Lincolnton, one at Greensboro, one at Murfreesboro, and two in Cumberland. At Charlotte are the works of John Wilkes, for machines and castings; and the Liddell Iron Works, for making engines, cotton presses, etc. At Raleigh are the extensive works of the Raleigh and Gaston Railroad Company, for the manufacture of freight and passenger cars for its own use and that of other companies; also passenger coaches.

What gives promise of being the most extensive iron works in the State are the North Carolina Steel and Iron Works under construction at Greensboro and nearly ready for operation. The capital stock of the

company is \$1,000,000. A one-hundred-ton blast furnace has been erected. The establishment is designed for the manufacture of pig-iron and Bessemer steel. The ores will chiefly be obtained from Ore Hill, in Chatham County, forty miles distant.

SOME OTHER INDUSTRIES.

A shoe factory is in operation at Asheville,* with a capital of \$50,000, which makes shoes of all kinds, fine and coarse, employing seventy people and turning out men's, ladies' and children's shoes of all grades, and having a good trade in this State and also Georgia, South Carolina and Tennessee; a cotton-bag factory at Concord and one at the Orange Factory in Durham County; a bleaching factory at Concord; a shuttle-block factory at Lexington; a factory for making cotton-planters at Greenville; one for making tobacco flues at Westfield, Stokes County; three for making locust-pins, or trunnels, at Bryson City, Swain County; and furniture factories—at Jefferson, Ashe County, one; at Asheville, three; at Lenoir, one; at Salem, two; at Gastonia, one; at High Point, two; at Lincolnton, two; at Williamston, one; at Charlotte, one; at Mount Gilead, Montgomery County, one; at Sanford, one; at Salisbury, two; at Raleigh, one; at Goldsboro, one, and at Jacksonville, one; and at Waynesville, a factory for fancy woodwork; at Salem, one for baskets; at High Point, one for brooms; at Selma, one for tobacco boxes, and one in Rowan; at Bayboro, one for potato barrels; at Clinton, one for crates and baskets.

RAILROADS.

A detailed history of railroad construction and progress in North Carolina would perhaps be out of place in these pages. Nevertheless, it may be both interesting and instructive to take a brief glance at the changes wrought within the last sixty years, from the period when public thought began to be directed to this marvellous vehicle of modern advancement. Without question, the "Numbers of Carlton," those wonderfully sagacious, hopeful, almost prophetic letters of Dr. Joseph Caldwell, President of the University of North Carolina, exerted the first powerful influence upon the public mind by demonstrating the feasibility of railroad construction over the line designated in his suggestion, the enormous development of the State by providing a cheap, swift and pleasant system of intercommunication, the increase of wealth and population by making accessible that which was difficult of reach, the creation of new subjects of public revenue, and, what was of more value than all, the evoking of a broad, common, cordial public sentiment by bringing the people of all sections into the field of a universal State unity, effacing in time those feelings of alienation, almost antagonism, which a people so widely separated and so topographically disjoined must unavoidably have entertained towards each other.

In the light of experience, the ideas, the plans, even the sanguine hopefulness of Dr. Caldwell, have now suggestions bordering on the

*Since removed to Elizabethton, Tenn.

ludicrous. The motive power to be used, the cost of construction, the speed of trains, all bear marks of that inexperience which results had not enlightened; for, it must be remembered, when the "Numbers of Carlton" appeared (they were written in 1827 and published in volume form in 1828) there were only three miles of railroad in the whole United States; and in England, where there was one road for traffic, and to some extent, of travel, in operation, the steam locomotive, though its capacity had been demonstrated, had not fully won the confidence of the cautious, prejudiced English people, or the cordial approval of jealous rival engineers and mechanical constructors. Dr. Caldwell wrote even before the bold projectors of the Baltimore and Ohio Railroad Company had embarked in their giant undertaking, and he suggested the use of steam, when that great corporation contented itself with the contemplation of the use of horse-power, with perhaps the occasional application of sail-power. Dr. Caldwell did, indeed, include in his estimates the use of horse-power, but his philosophic mind, free from prejudices, had been convinced through his own observations of the future of steam, and he foresaw the time when it would become the universal motor. In this State it so happened that the occasion never arose when it was called upon to displace animal power; for, when the time arrived for the building of railroads in North Carolina, steam had become the undisputed master. The first iron way laid in this State did, indeed, use horse-power. That was the tramway constructed in Raleigh in 1832 to transport material from the granite quarry to the Capitol, then under construction. It was called a railroad then; now it is recalled by its real name of tramway. But it had its uses, besides the aid given in the building of the Capitol. It familiarized the public mind with the conception of a railroad, and gave ocular and practical demonstration of its superior capacity for the transportation of heavy weights over the steep, heavy, often muddy, common roads of the country.

Dr. Caldwell's plan of a railroad from Newbern, with water connection thence to Beaufort harbor, and westward as far as the State line, near Paint Rock, while it interested the thoughtful, and amused speculative, minds, bore no fruit for a long time. It lay in abeyance long enough to have permitted the building of several lines transverse to the line he had proposed, and almost neutralizing his sagacious and patriotic purposes. In our day his ideas are realized, and on a grander and more practical and useful scale than his experience enabled him to conceive; yet from him the honor and merit of such conception cannot be withheld, for with him it was as original as it was bold and comprehensive.

The first line of railroad chartered in North Carolina was that between Fayetteville and Salisbury. The charter was granted in 1833, and a survey was made. But the terminal towns were relatively small and poor; the intermediate country was thinly populated and poorer even than the towns; capitalists from abroad could not be won to invest in an enterprise that seemed chimerical, and which did not have the encouragement or the experience of other like enterprises, and the

State had not learned (what it since has painfully unlearned) how to foster the energies of its people by aid of the public treasure or credit. And this, the first essay at railroad building in North Carolina, failed.

Virginia had thrust the ends of two of its roads within our borders. The Petersburg and Roanoke road touched the Roanoke River at Blakely, a few miles below the present Weldon. The terminus of this road, by the construction of the Greenville branch, was afterwards changed to Gaston, several miles above, and at the foot of the slack-water navigation of the Roanoke, which gave facilities to the transportation of the large tobacco and grain crops of the border counties of Virginia and North Carolina. This new terminus prompted the suggestion of an extension of the line from Gaston into North Carolina, with its terminus at Raleigh, and passing through the wealthy counties of Halifax, Warren, Granville, Franklin and Wake; and thus came into being the Raleigh and Gaston road, begun in 1836, finished in 1840.

In like manner the extension of the Seaboard and Roanoke road from its terminus at Weldon to Wilmington, to form a link in the line of travel between the North and the South, seized upon the public mind as feasible and profitable. But the original charter of this road contemplated not a direct course, but one by way of the State capital, and the corporate name of the company, chartered in 1836, was the Wilmington and Raleigh Road, subsequently changed to that of Wilmington and Weldon Road, and completed between the terminals in 1840. It fell to the town of Wilmington, aided by its own energies and high credit, alone to carry out this most remarkable of modern enterprises—a road of 164 miles in length, in the comparative infancy of the railroad systems—and to open to the world at this early period one of the longest roads then in existence on this continent, longer than any at that time finished in Europe.

What is justly to be called the conception of Dr. Caldwell did not take form until about 1853, when the North Carolina road from Goldsboro to Charlotte, a distance of 223 miles, was undertaken, and completed in 1856. At Goldsboro the Atlantic and North Carolina road was begun, and completed in 1857 to Morehead City, on Beaufort harbor, a distance of 97 miles, thus forming a great portion of that long chain contemplated by the sagacious and prophetic projector. There yet remained the construction of the western links of the chain, from Salisbury to Paint Rock on one branch, and to Murphy on another. This was completed to a point near Morganton, where further progress was stopped by the war. Upon the return of peace, or very soon after, work was resumed, and, after many interruptions, financial and others, the whole work is now completed—the Paint Rock branch in 1882, and the Murphy branch in 1890. And now the State has the satisfaction of possessing a well-built, admirably conducted and inexpressibly convenient line of road, extending from the very seashore to the utmost limits of its mountain boundaries, and now indissolubly linking in one body the whole of its one disunited territory by imperishable links of steel. The State is now interlaced with railroads, all connected with the great main lines of the United States.

FROM THE REPORT OF THE RAILROAD COMMISSION FOR 1892 THE FOLLOWING IS TAKEN:

NAME OF ROAD.	Number of Valuation miles.	Total value of track.	Rolling Stock.	Other Property.	Aggregate as- sessed value.	Equals a valuation per mile of
Aberdeen and West End	26.60	\$ 52,000	\$ 16,775 00	\$ 1,200 00	\$ 69,975 00	\$ 2,631.34
Albemarle and Raleigh	58.82	255,280	35,570 00	4,133 00	275,083 00	4,676.69
Asheville and Spartanburg	41.31	310,380	15,926 00	4,100 00	330,006 00	7,112.62
Atlanta and Charlotte Air-Line	51.01	510,160	40,093 00	2,850 00	553,413 00	10,849.70
Atlantic and Danville	22.40	112,000	28,291 49	750 00	141,041 49	6,296.63
Atlantic, Tennessee and Ohio	45.35	249,315	4,100 00	6,400 00	260,115 00	5,738.25
Cape Fear and Yadkin Valley	351.12	1,757,100	261,750 00	36,270 00	2,055,110 00	5,848.01
Carolina Central	282.66	1,192,670	151,975 00	31,500 00	1,679,145 00	5,940.51
Cardozo	10.32	20,610	3,570 00	1,000 00	25,210 00	2,442.80
Cashie and Chowan	35	43,750	7,775 00		51,525 00	1,472.15
Cashie and Roanoke	30	30,000	6,150 00		36,150 00	1,205 00
Charleston, Ocheutani and Chicago	61.50	222,500	75,205 00	3,000 00	400,705 00	6,212.48
Charlotte, Columbia and Augusta	13.40	113,900	7,087 00	6,500 00	128,087 00	9,538.73
Chester and Lenoir	61.53	193,300	11,163 00	4,100 00	208,563 00	3,356.52
Chenaw and Salisbury	15.81	47,430		2,700 00	50,130 00	
Danville and South-western	8	20,000		1,000 00	21,000 00	
Danville and Western	.82	2,475			2,475 00	
Durham and Northern	43.41	195,450	13,125 00	2,550 00	211,155 00	4,860.84
East Tennessee and Western North Carolina	3	9,300	2,325 00	1,800 00	13,625 00	4,542 00
Egypt	8	16,060	16,190 00		32,190 00	
Georgia, Carolina and Northern	15.51	93,240	4,933 21	2,100 00	100,273 21	6,471.25
Hamilton Railway Company	17	42,500	12,300 00	500 00	55,300 00	3,252.94
High Point, Randleman, Asheboro and Southern	31.48	91,440	6,545 00	6,937 00	107,942 00	3,428.90
Hofmann and Troy	3.50	5,270	2,000 00		7,270 00	
Jacksonville and Washington	22.75	45,460	2,125 00	5,000 00	52,585 00	2,343.50
Louisburg	10.23	30,600	2,700 00	50 00	33,940 00	3,317.69
Lynchburg and Durham, "N. & W."	43.38	216,900	26,205 11	5,400 00	248,505 11	5,728.56
Marion and North Georgia	13.25	59,625	3,100 00	600 00	63,325 00	4,779.21
Marion and North Rowland	16	32,000	2,175 00	800 00	34,975 00	
Maxton	21.71	43,120			43,120 00	2,000 00
Midland North Carolina	.31	310	168 92	900 00	1,378 92	
Milton and Sutherland	3	9,000	1,500 00		13,500 00	4,500 00
New Hanover Transit Company	6.25	12,500		200 00	12,700 00	2,032 00
Norfolk and Southern	60.19	272,205	77,899 78		350,104 78	5,787.12
Albemarle and Fincigo (Branch)	32.31	97,020	11,396 22		108,416 22	4,280.03
Norfolk and Carolina	69.06	552,480	3,100 00	9,000 00	564,580 00	8,175.21
North Carolina	226.20	1,809,600	111,708 00	150,300 00	1,970,707 00	7,969.79
North Western North Carolina	29.17	401,340	19,365 00	18,515 00	442,250 00	4,199.51
North Carolina Midland	26.94	67,370		5,200 00	72,570 00	2,693.02
Oxford and Clarksville	52.01	231,180	11,511 00	6,470 00	252,161 00	4,845.52
Oxford and Henderson	14.12	49,120	7,915 00	3,235 00	60,170 00	4,261.33
Palmetto	7.33	11,660	1,784 17	100 00	16,541 17	
Petersburg	7.59	75,900		1,000 00	76,900 00	
Piedmont	17.82	478,200		7,175 00	485,375 00	10,156.32

LIST OF RAILROADS IN NORTH CAROLINA, ETC.—Continued.

NAME OF ROAD.	Number of Valuation miles.	Total value of track.	Rolling Stock.	Other Property.	Aggregate as- sessed value.	Equals a valuation per mile of
Pittsboro	12.35	\$ 21,700	\$ 28,185 00	\$ 400 00	\$ 25,100 00	\$ 6,329 69
Raleigh and Augusta Air-Line	114.53	687,180	35,000 00	9,375 00	724,940 00	304 00
Raleigh and Gaston	115.13		16,512 00		323,515 24	6,041 66
Roanoke and Southern, "N. & W."	48.71	292,200		14,743 00	46,700 00	2,239 80
Statesville and Western	20.85	41,700		5,000 00	76,781 16	3,011 02
Suffolk and Carolina	25.50	63,750	12,006 16	1,025 00	43,000 00	1,954 54
Suffolk Lumber Company	22	43,000			25,855 00	2,456 88
State University	10.32	20,640	2,515 00	2,200 00		
Seaboard and Roanoke	20.90		2,500 00	700 00		
Warronton	3.33	6,660			9,860 00	2,960 96
Western North Carolina—						
Salisbury to Old Fort	119.97	1,019,745	43,666 00		1,113,411 00	9,280 74
Old Fort to Paint Rock	86.07	688,560	67,204 00		755,764 00	8,780 80
Murphy Branch	125.56	376,080	15,000 00	6,000 00	397,080 00	3,167 25
Wilmington, Chadbourne and Conway	26	65,000	8,850 00	850 00	74,700 00	2,873 06
Wilmington, Columbia and Augusta	73.61	736,100	134,662 00	8,442 00	879,204 00	11,944 08
Wilmington, Onslow and East Carolina	52.95	185,325	27,885 00	4,030 00	217,240 00	
Wilmington Railway Bridge Company	2.40	80,000			80,000 00	
Wilmington Sea Coast	11	44,000	14,805 00	1,200 00	60,005 00	5,455 00
Wilmington and Weldon	191.93					
Fayetteville Branch	118.54	918,320	75,000 00		1,023,320 00	
Nashville Branch	19.66	68,810	8,000 00		76,810 00	
Tarboro Branch	17.25	103,500	12,000 00		115,500 00	
Clinton Branch	13.71	47,985	6,000 00		53,985 00	3,937 63
Scotland Neck Branch	87.08	522,480	25,000 00		547,480 00	6,287 09
Halifax and Weldon Branch	8	80,000	61,709 00		141,709 00	
Washington Branch	25.72	102,880			102,880 00	4,000 00
Yadkin	42.27	105,075	6,000 00	4,932 00	116,007 00	2,760 04
Roanoke and Tar River	35.07	140,280	12,500 00	4,925 00	157,705 00	4,496 86
Winton	8	16,000	2,400 00	100 00	18,500 00	2,312 50
Atlantic and North Carolina	102.26	511,300	60,375 00	130,400 00	702,075 00	6,865 58
Fairfield Canal Company				6,678 00	6,678 00	
Albemarle and Chesapeake Canal Company				100,000 00	100,000 00	
Richmond and Danville Railway Co. (A. B. A., Trustee)				12,066 33	12,066 33	
Pullman Palace Car Company	3,593 09	\$ 17,497,130	\$ 1,773,150 12	\$ 648,010 33	\$ 19,646,470 69	
					80,289 87	
					\$ 19,726,760 56	

*Wilmington to Hamlet, Charlotte to Rutherfordton, 205.66 miles, at \$4,500; Hamlet to Monroe, 52.60, at \$8,000; Monroe to Charlotte, 24.40, at \$6,000.



ASCENT OF THE BLUE RIDGE.

CANALS AND ARTIFICIAL NAVIGATION.

While North Carolina appeared to fall behind her sister States in the work of internal improvements, facts demonstrate that it was neither from lack of intelligence nor energy that this was the case. It was her want of money, or rather the scattered and isolated relation her people bore to each other, and the difficulty of concentrating purpose or capital upon the completion of those measures, the necessity of which was early apparent to the statesmanship, the interests and the patriotism of her people. We have shown in the sketch of the railroads with what avidity the suggestion of that mode of intercommunication was seized upon as compensation for the mortification that followed the disappointment in the earlier conception of canals and river improvement. That this latter system so early engaged the earnest and active energies of North Carolina proves the daring, enterprising character of its people—proving beyond question that, so far from being in the rear, this State was in the front, holding the leadership, to be followed long years after by the great State of New York; and proving also the enthusiasm of a great people, who had not well counted the cost, and who, in many things, had failed because they did not adequately realize the magnitude of their ideas and their own relative poverty.

In the construction of canals North Carolina claims a proud pre-eminence; for, as far back as 1790, was authorized by the Legislature of the State the construction of the Dismal Swamp Canal, connecting the waters of Pasquotank River (North Carolina) with those of Elizabeth River (Virginia). This was required to be done by private subscription, and it was so done; and thus was completed the existing Dismal Swamp Canal, undertaken thirty-five years before the great Erie Canal was completed, and eighteen years before the pioneer canal of New England—the Middlesex—was opened for use. This canal served its purpose usefully for nearly a century. Recently it has been sold, perhaps for other uses, because other means of intercommunication, swifter and more capacious, have largely superseded it.

In addition to this, early steps were taken to improve the navigation of several large streams in this State, large volumes of water in their lower courses finding entrance into good and convenient harbors, but, in their middle courses, interrupted by rocky obstructive ledges, above which, in several instances, there were long stretches of natural slack-water, with practicable navigation for comparatively long distances. These undertakings were made a long time since. Thus the Cape Fear Navigation Company, with power to construct canals, received a charter to improve the Cape Fear River in 1795; the Roanoke Navigation Company and the Neuse River Navigation Company in 1812; the New River, the Tar River, the Catawba River and the Cape Fear and Yadkin River companies in 1816.

Upon all these schemes vast sums were spent, and little accomplished. Projectors were all disappointed, because, in all instances, the costs far

exceeded estimates, and the relative poverty of the people and communities and the inability to enlist the aid of capital abroad, as was subsequently the case in the early days of railroad construction, compelled the ultimate abandonment of every effort, and left our river-sides strewn with the wrecks of labor and fortunes, with here and there some partially finished section of work, like the Weldon Canal, to become available in after generations as valuable water-power.

Of late years the Albemarle and Chesapeake Canal, connecting by a cut of a few miles waters in Virginia and North Carolina—the waters of Chesapeake Bay with those of Albemarle Sound—gives navigation to sea-going vessels and opens up an inland navigation from Newbern to Norfolk, and, for smaller vessels, through the Clubfoot and Harlow Canal, from the waters of Beaufort harbor.

The following is a statement of what existed ten years ago, and there has been little or no change in the condition of our waterways since that period:

“There are eleven hundred miles of inland steamboat navigation in North Carolina. Ocean steamers of large burden come into Wilmington and Beaufort, and the Old Dominion and Clyde lines of coastwise steamers come to Newbern, Elizabeth City and Washington via the Albemarle and Chesapeake Canal. The sounds are navigated by a large fleet of light-draft and fast steamboats that furnish abundant means of transportation for passengers and freight between the numerous points where they touch. Steamboats run up the Chowan and Black Water to Franklin, Va., and up the Meherrin to Murfreesboro; up the Roanoke to Halifax; up the Neuse to Kinston; up the Trent to Trenton; up the Cape Fear to Fayetteville; up the Tar to Tarboro; up the Scuppernong to Creswell; up the Alligator to Fairfield; up the Cashie to Windsor; up the Perquimans River to Belvidere; up the Little River to Woodville; up the Pasquotank many miles above Elizabeth City; up North River to Indian Township, and up Contentnea and Swift Creeks to the head of navigation.”

NEWSPAPERS.

The following is a list of newspapers published in North Carolina in 1892:

Albemarle—Stanly News, weekly. Asheboro—Courier, weekly. Asheville—Citizen, daily and weekly; Mountain Home Journal, weekly; Morning Gazette, daily; Baptist, weekly; Freeman's Advocate (colored), weekly; Democrat, weekly; Temperance Herald, weekly; Anchor, monthly; Western North Carolina Methodist, weekly. Bakersville—Western Democrat, weekly. Beaufort—Atlantic Seaside, weekly. Boone—Watauga Democrat, weekly. Brevard—Hustler, weekly. Bryson City—Times, weekly. Burgaw—Burgaw Herald, weekly. Burlington—Burlington News, weekly; Burlington Herald, weekly. Carthage—Carthage Blade, weekly. Chadbourn—Columbus News, weekly. Chapel Hill—University Magazine, monthly. Charlotte—Observer, daily and weekly; Democrat, weekly; Times, weekly; News, daily; Messenger (colored), weekly. Clinton—Caucasian, weekly. Concord—Standard, daily and weekly; Times, weekly; Piedmont Farmer, weekly; Missionary Age, monthly. Danbury—Reporter-Post, weekly. Dunn—Central Times, weekly. Durham—Globe, daily and weekly; Sun, daily and weekly; Recorder, weekly; Southern Educator, monthly. Edenton—

Fisherman and Farmer, weekly. Elizabeth City—Economist-Falcon, weekly; News, weekly; North Carolinian, weekly. Elkin—Courier, weekly. Elm City—Rural Home, weekly. Fayetteville—Observer, weekly; North Carolina Baptist, weekly. Forest City—Ledger, weekly. Franklin—The Press, weekly. Gamewell—Rackett, weekly. Gastonia—Gazette, weekly. Germanton—Times, weekly. Goldsboro—Argus, daily and weekly; Agricultural Bee, weekly; Headlight, weekly; Alliance Sentinel, weekly. Graham—Alamance Gleaner, weekly. Greensboro—Record, daily; Workman, daily; Patriot, weekly; Carolina Methodist, weekly; North State, weekly; Royal Knight (colored), weekly; College Message, monthly. Greenville—Eastern Reflector, weekly. Guilford College—Collegian, monthly. Henderson—Gold Leaf, weekly. Hendersonville—Hendersonville Times, weekly. Hertford—Perquimans Record, weekly. Hickory—Press and Carolinian, weekly; Mercury, weekly. Highlands—Star, weekly. High Point—Enterprise, weekly. Hillsboro—Orange County Observer, weekly. Kenly—Weekly Visitor, weekly. Kernersville—News, weekly. Kings Mountain—News, weekly. Kinston—Free Press, weekly; Rural Home and Sentinel, weekly. LaGrange—The Spectator, weekly. Laurinburg—Exchange, weekly. Leaksville—Gazette, weekly. Lenoir—Topic, weekly. Lexington—Dispatch, weekly. Lincolnton—Courier, weekly; Hearty Worker, monthly. Louisburg—Franklin Times, weekly. Lumberton—Robesonian, weekly. Madison—Leader, weekly; News, weekly. Marion—Western Free Lance, weekly. Maxton—Maxton Union, weekly. Milton—Milton Enterprise, weekly. Mocksville—Davie Times, weekly. Moncure—Alliance Echo, weekly. Monroe—Enquirer, weekly. Morganton—Herald, weekly. Mount Airy—Yadkin Valley News, weekly. Mount Holly—Mount Holly News, weekly. Mount Olive—Telegram, weekly. Mount Pleasant—College Advocate, monthly. Murfreesboro—Index, weekly. Murphy—Scout, weekly. Newbern—Journal, daily and weekly. Newton—Enterprise, weekly; College Visitor, monthly. Oak Ridge—Oak Leaf, monthly. Oxford—Oxford Day, daily; Public Ledger, weekly; Orphan's Friend, weekly; Bright Jewels, monthly. Pine Bluff—Home-Seekers' Guide, weekly. Pittsboro—Chatham Record, weekly. Plymouth—Roanoke Beacon, weekly. Potocasi—Roanoke Patron, weekly. Raleigh—News and Observer, daily and weekly; State Chronicle, daily and weekly; Evening Visitor, daily; Christian Advocate, weekly; Biblical Recorder, weekly; Christian Sun, weekly; Spirit of the Age, weekly; The Eclectic, monthly, The Gazette, monthly; North Carolinian, weekly; Progressive Farmer, weekly; Signal, weekly; North Carolina Teacher, monthly. Randleman—Political Broadax, weekly. Red Springs—Farmer and Scottish Chief, weekly; Comet, weekly. Reidsville—Review, weekly; Webster's Weekly, weekly. Rockingham—Rocket, weekly; Spirit of the South, weekly. Rocky Mount—Argonaut, weekly; Phoenix, weekly. Roxboro—Person County Courier, weekly; Bulletin, weekly. Rutherfordton—Rutherford Times, weekly. Salem—People's Press, weekly; The Academy, monthly. Salisbury—Carolina Watchman, weekly; Herald, daily and weekly; Truth, weekly; News, weekly; Star of Zion (colored), weekly. Sanford—Central Express, weekly. Scotland Neck—Democrat, weekly. Shelby—Aurora, weekly; Review, weekly. Siler City—Leader, weekly. Smithfield—Herald, weekly. Snow Hill—Free-Will Baptist, weekly. Southern Pines—Development, weekly. Southport—Leader, weekly. Sparta—Alleghany Star, weekly. Statesville—Landmark, weekly; Christian Advocate, weekly. Sylva—Tuckaseegee Democrat, weekly. Tarboro—Southerner, daily and weekly; Farmers' Advocate, weekly. Taylorsville—Index, weekly. Thomasville—Charity and Children, weekly; Living Issue, weekly. Trinity College—Country Life, weekly; Archive, monthly. Troy—Montgomery Vidette, weekly. Wadesboro—Messenger-Intelligencer, weekly. Wake Forest—Wake Forest Student, monthly. Walnut Cove—Advance, weekly. Warrenton—Gazette, weekly. Washington—Gazette, weekly; Progress, weekly. Waynesville—Courier, weekly. Webster—Herald, weekly. Whitakers—The Rattler, weekly. Weldon—Roanoke News, weekly; Railroad Ticket, daily. Wilkesboro—Chronicle, daily. North Wilkesboro—News, weekly. Wilmington—Messenger, daily and weekly; Star, daily and weekly; Review, daily; North Carolina Presbyterian, weekly; North Carolina Medical Journal, monthly; Africo-American Presbyterian (colored), monthly; Atlantic Methodist, weekly. Wilson—Advance, weekly; Mirror, weekly; Zion's Landmark, weekly. Windsor—Ledger, weekly. Winston—Twin City Sentinel, daily and weekly; Southern Tobacco Journal, weekly; Union Republican, weekly. Yanceyville—Caswell News, weekly. Dailies and weeklies, 24; weeklies, 152; monthlies, 18; total, 194.

The above list is taken from the last Report of the Bureau of Labor Statistics (for 1892), with such corrections as have become necessary by additions and suspensions, and is as nearly accurate as the means of information will permit.

BUILDING STONES.

In all sections of the State are found in greater or less excellence, and with wider or more limited diffusion, excellent stones for building material, sandstone, granite, limestone and marble. Only in recent years, owing to difficulty of transportation, have quarries been opened to the extent of giving sufficient tests of the value and beauty of the varied materials as to authorize the enlistment of capital and the introduction of efficient and economical machinery. Now much material, the value of which was known, but whose use was costly and inconvenient, is coming into use, and some quarries have deservedly gained high repute far beyond the limits of the State.

A review of some of the different stores of valuable building material in different parts of the State will be attempted, without effort to clothe the statement in scientific or technical terms.

The granites are named first, because that stone was first conspicuously called into notice in North Carolina by the construction of the State Capitol at Raleigh. This is built of the light-gray gneissic granite of the Laurentian formation, a fine quarry of which was opened for the use of Capitol construction on the south-east border of the City of Raleigh. Feldspar is a prominent ingredient in this stone, but it does not appear to impair its durability—the Capitol, after fifty years of existence, suffering apparently nothing by weathering. It might have been observed in the operation of this quarry that the increase in depth disclosed a finer, harder stone, with smaller admixture of feldspar, a stone of pleasing bluish-gray and capable of high polish; and, without doubt, far the most valuable as well as most beautiful contents of the quarry remain untouched.

Other quarries have been opened near Raleigh, and that on the Penitentiary grounds, and freely used in the construction of that building and its massive enclosing walls, furnished abundantly a most durable and beautiful stone.

In Granville County, at the Henderson Quarry, is a quarry of a harder and darker granite, the material of which is much used for building, and is preferred to most others as peculiarly suited for Belgian paving blocks.

In Wilson County, near the town of Wilson, and convenient to the Wilmington and Weldon Railroad, is a quarry of granite similar to the famous Scotch granite, with a reddish tint, hard, taking a fine polish, and suitable for monumental purposes.

In Alamance County, not far from Graham station, is a quarry of fine dark-gray granite, which also takes a high polish, and suitable for many valuable purposes.

Near Mount Airy, in Surry County, there is a wonderful outcrop of light-gray granite, occupying an exposed surface of many acres, and now the scene of very active and extensive operations; the material being largely used for building bridge piers and abutments, and for paving.

Near Kernersville is also a quarry of granite—gray, hard and of fine texture, taking a fine polish, and much used in monumental work.

Among the most remarkable granite formations in the State is that at Dunn's Mountain, four miles south-east of Salisbury. This is a feldspathic stone, almost white, and, except for occasional small nodules of iron pyrites, free from any substance to impair the homogeneousness of texture or color. It forms a fine building stone, illustrated with fine effect in the Government building at Raleigh, so white and fine in color as, at a short distance, to present the appearance of marble. The whole of Dunn's Mountain, several hundred acres in extent, constitutes an exhaustless quarry, which, in the future, promises fame and fortune to those who own it.

Near Mooresville, in Iredell County, is found extensively a granite of remarkably fine quality. It is of a tender bluish-gray, to the eye presenting softness of texture as well as softness of tint, yet, in fact, a hard, durable stone, taking a very high polish, superior as a building stone, and for monumental purposes without a superior. A fine illustration of its value and fitness for this use is found in the characteristic monument erected to the memory of the late W. C. Kerr, former State Geologist, standing in the City Cemetery at Raleigh.

A very remarkable and also beautiful and valuable variety of granite is found in Anson County on Jones Creek. It is nearly black, with a bronze olivaceous tint, takes a beautiful polish, and is adapted to rare ornamental uses.

Three and a half miles south-west of Rockingham, on the Carolina Central Railroad, is found a beautiful gray porphyritic granite, with large pinkish crystals of feldspar, including a small amount of pyrites. Large boulders and ledges of this stone are found over considerable area on the hill-side, both above and below the railroad. One mile and a half west of this place is found a much finer grained dark hornblend granite. No quarrying has been done in either of these places, except for railroad purposes.

The prevalence of granite east of the Blue Ridge is a marked feature in the distribution of the rocks, and it would be idle to note the numerous points at which it may be found. It is more sparingly distributed west of the Ridge, and there the general character is somewhat inferior. One of the largest formations is in Henderson County, at Flat Rock, where naked ledges of a gneissoid granite present themselves so conspicuously as to give name to the locality. This stone is largely used in building, and, from the facility with which it is split and divided, is used freely in Hendersonville for the construction of houses, and applied with the facility and convenience with which brick are laid. In other parts of Henderson County, and in a few localities in Buncombe, there are granite quarries, but this stone is not characteristic of the transmontane section.

SANDSTONE.

In the long trough which marks the former existence of a sea-basin, extending from a point a little to the west of Oxford, south-westwardly through the intervening counties to the South Carolina boundary, and

beyond, is a profusion of sandstone suitable for building purposes, and which is reached and utilized in several places by the opening of quarries. Mr. George B. Hanna, of the State Geological Survey, has furnished the following information of some of the work done:

In Anson County is the Wadesboro Brownstone Quarry, one mile north of Wadesboro, on the Carolina Central Railroad. The stone is quite hard and uniform, of a light chocolate-brown to a grayish-brown color, and of fine to medium texture, the lighter colors being usually coarser. The quarry was opened in 1887, and was worked until June, 1891. The quarry face is about 150 feet long by 30 feet high, though much of this face and the material which has been quarried is worthless cap-rock and soil. The cap varies in thickness from 2 to 15 feet. Quarrying is very much facilitated by natural jointings and bedding, and blocks 8x8x8, and smaller, are easily obtained. From 40,000 to 50,000 feet of stone have been quarried. The stone dips S. E. 20°, and the quarry faces almost due west. All stone was sawed either at the quarry or shipped rough; dimension stone, 75 cents per foot; sawed two ways, \$1; four ways, \$1.25. It was used principally for trimming brick buildings. Specimens of it may be seen from Atlanta to Baltimore, notably the United States Court-houses and Post-offices at Wilmington, Asheville and Statesville, N. C., the Young Men's Christian Association buildings at Charlotte and Atlanta, the Garrett School building at Baltimore, and the Baptist Church at Wadesboro. A steam-pump was constantly employed to drain the quarry, and in rainy weather work would sometimes be suspended for a month on account of flooding. The machinery connected with the quarry consists of two boilers, an engine of about fifty horse-power, five gangs of saws, steam-drill, one steam-power derrick of fourteen tons capacity, and two horse-power derricks. The full force employed was about sixty workmen.

There is, as indicated above, a temporary suspension of work, due probably to reorganization of the company operating it, but the quarry is inexhaustible, and the demand for its products not likely to suffer diminution.

The "E. Linehan Quarry" is about a quarter of a mile from the above, on the Carolina Central Railroad. The stone is practically the same, with about the same advantages and disadvantages in quarrying. The quarry face is about 20 feet high and 300 feet long. The stone is dressed by hand at the quarry, and shipped rough.

In Chatham County is the Egypt Coal Company's quarry, on the proposed extension of the Egypt Railroad. The output is a compact fine reddish-brown sandstone, in a bluff from 30 to 40 feet high, on the east bank of Deep River, and was worked a little in the fall of 1889—3,000 to 4,000 feet having been quarried. Some of this stone shows slight lamination, though the texture is usually quite uniform. The cap is not over 10 feet thick, including the overlying soil. This bluff extends down the river about half a mile.

In Moore County is the Rockle and Laurence Quarry, a quarter of a mile southwest of Sanford, and a quarter of a mile from the Raleigh and Augusta Air-Line Railroad. The material is a rather soft reddish-brown fine-grained sandstone. The quarry was opened in the spring of 1890, and worked until the spring of 1892. About 25,000 cubic feet have been taken out. The color is quite uniform, but the texture is rather variable, frequently running into fine conglomerate, sometimes containing a good deal of clay. It is used for house trimming and ornamental work, and may be seen in the City Hall of Charlotte, the Court-house and Post-office at Greenville, S. C., and other buildings in Atlanta, Danville, Norfolk and Washington City. All the stone was dressed at the quarry and hauled to the railroad at Sanford. The stripping does not exceed three or four feet, and there is practically no cap-stone. A steam-pump was necessary to drain the quarry. Hoisting and drilling was also done by steam-power, but all dressing was done by hand. The full working force was sixty men, including stone-dressers.

The Carolina Brownstone Quarry, one mile north-west of Sanford, on the Cape Fear and Yadkin Valley Railroad, was opened at the present workings in February, 1892, and about 25,000 feet of stone have been taken out. The stone is a tolerably uniform fine compact grayish-brown sandstone, and is used for house trimmings. It has been applied in Saint Luke's Church, Norfolk, and in the Court-house at Bristol, Tenn. The capacity is from eight to ten car-loads per week. The cap-stone is from two to four feet thick, under about six feet of soil. The quarry is drained naturally. Hand-drills and horse-power derricks are used, and only dimension stone is quarried.

A remarkably promising sandstone quarry has been located on McLendon's Creek, four miles south-west of Carthage, and a company with large capital has been organized to work it. The formation possesses peculiar advantages for working it, the outcrop being a large rising on the side of the valley of the creek, so that the stone is accessible without under-ground work, and the drainage is natural. Until a railroad is extended from Carthage to the quarry only preparatory work will be done.

In Durham County small quantities of sandstone for local use have been quarried in three places in the vicinity of Durham: 1st. A rather coarse graystone in a low bluff about a mile south-east of Durham. 2d. A uniform fine brownstone about one mile east. Both of these are about a mile from railroads, and the product was hauled away in wagons when worked. 3d. Duke's Quarry, at the junction of the belt line with the Lynchburg and Durham Railroad. This is mostly a finely laminated reddish brownstone, in a considerable hill beside the railroad.

Rather coarse gray sandstone, such as was used in the University, is found about two miles east of Chapel Hill.

Near Brasfields, five miles east of Durham, is found a sandstone of pleasing reddish-gray, the material from which may be seen in the bell-tower of Christ Church, Raleigh, the whole of which is built of this stone. This quarry is not now worked, though by no means exhausted.

MARBLE.

The finer stones under this name are not found of much value or in considerable quantity, except in the western section, where they begin to occur in the deep gorge of the Nantahala River, where they present themselves on the south faces of the mountains, which, on the north side of the river, start in the narrow valley. Professor Kerr classes these marbles under the name of limestone, which, in truth, they are, but of a valuable and peculiarly beautiful kind—hard, close-grained, uniform in texture, taking high polish and displaying varied and beautiful coloring—white, black, rose-colored, salmon, and variegated—affording fine material for ornamental and architectural uses. The quantity seems exhaustless, and as access to transportation is now easy, the quarries now being opened promise to be largely worked. These are now operated by a Georgia company, with headquarters at Atlanta, and the finished work is put on the market as "Georgia marble," while its true origin is indicated by the peculiar and various coloring. Red Marble Gap, the crossing on the railroad from Macon into Cherokee, takes its name from the deep-colored marble which flanks the railroad track along portions of its course.

Entering Cherokee, and descending Valley River, marble of variegated hues presents itself at several points. Near Andrews, on the railroad, a seam of richly-colored dark stone is exposed in the bed of the river, a polished specimen of which is placed in the State Geological Museum. Near Murphy, pure white marble of a somewhat coarser texture presents itself, and in large quantities, and possesses high value as building stone, and perhaps also for monumental purposes, the stone taking a good polish.

Limestone, which cannot be classed as a building stone, is somewhat sparingly distributed through the State. It occurs as magnesian limestone in the counties of Forsyth, Yadkin and Stokes. Crystalline limestone is found in Gaston County, and carbonate of lime, making a good lime, is found in portions of Buncombe and Henderson Counties, and in a very marked though somewhat narrow outcrop in Madison County, a short distance below the Hot Springs.

That part of the eastern section of the State lying south of the Neuse River and along Trent River, abounds in shell limestone, very suitable as a building stone. It is readily quarried in large masses, and rapidly becomes hard on exposure to the air, and is very durable. For massive architecture it is very suitable. The only large application of it seems to have been in the enclosure of the City Cemetery at Newbern, and the fine archways over the chief entrance displays the character of the stone to fine advantage.

SLATE.

At Mr. Robert Berns', three miles north-west of Egypt, on the Pittsboro road, a blue compact clay slate is found, which splits well on surface exposure. Pieces eighteen inches square, and thin enough for roofing, have been split out within one foot of the surface. No work has been done here. Slate of the same nature is found three miles west of Goldston, at Mr. Hugh Womble's. On Rocky River, four miles above its mouth, a hard blue silicious slate is found, which splits well on outcrop. It has not been quarried.

GOLD MINING IN NORTH CAROLINA, 1892.

THE AURIFEROUS AREA OF NORTH CAROLINA EMBRACES NEARLY ONE-HALF OF THE STATE.

MODES OF OCCURRENCE OF THE GOLD.—1st. IN "GRAVEL" ON THE BED-ROCK OR IN OLD CHANNELS, WHERE IT HAS BEEN CONCENTRATED. 2d. IN THE MASS OF THE ORIGINAL ROCK. 3d. IN THE SCHISTS FORMING BEDDED VEINS. 4th. IN QUARTZ VEINS.

The entire surface of the country has long been subject to weathering agencies to a great depth, and the auriferous bodies have shared in these changes. Nearly or quite to the depth of these alterations the gold is in a "free" condition and easily savable. Deeper than this the ores are only partly changed, and the associations of the gold are such as to demand skilled treatment and costly appliances. The gold is not uniformly distributed in the ore bodies, for both beds and veins have "chimneys," or "shoots," in which the gold is concentrated, leaving the intermediate parts relatively poor. The auriferous schists are sometimes hundreds of feet thick, and in such cases the term "auriferous" is only the convenient way of discriminating the workable from the non-workable.



TABLE ROCK AND HAWK'S BILL.

For the geology of the State the reader is referred to the Geological Reports already published, and to bulletins soon to be issued. This subject may be dismissed here in the following brief statement: Three general geological systems are easily discriminated (the two lowermost are probably Archean), viz., the Lower Laurentian and the Upper Laurentian, and the Huronian. The first-named is prominent in the Greensboro and Charlotte granite belt, which is from five to thirty-five miles in width. Veins of gold-bearing iron and copper pyrites are numerous along the eastern half of the belt, and in the southern part. These vary from a few inches to sixty feet in width. The ores are refractory only as the sulphurets make them so. Westward of this axial area, and stretching westward to Tennessee, is a body classed as Upper Laurentian. Its rocks are gneissoid to slaty in structure. The veins, especially in the western part, are generally narrow, though numerous, and not infrequently rich. The third geological formation is to the eastward of the central belt, viz., the Huronian. It is a region of quartzites and "slates," and is fifteen to forty-five miles wide. The mineral resources of this middle body of slates and schists is very great, in iron as well as in gold. In the latter it has hardly a rival in the entire Appalachian region. In the western edge of this belt, adjacent to its junction with the Lower Laurentian, is a stretch of auriferous copper, lead and pyrite mines, which have been worked more deeply and extensively than any other in the State.

WARREN, FRANKLIN AND NASH COUNTIES.

The extreme north-east deposits occur in these counties, and cover an area of more than two hundred square miles. The important points in this area are: The Thomas Mine, one mile and a half north-east from Ransom's Bridge. The Portis Mine is in the north-east corner of Franklin County. This mining tract embraces 938 acres. Both hydraulic and vein work is carried on. This work is largely automatic, and the outlay for the plant is not excessive. The cost of treatment is surprisingly low. The Mann-Arrington Mine at Argo has a fine record. The placer washings still yield many fine nuggets. At the 100 foot level there is a body of ore three feet wide. At the Conyers Mine, seven miles from Whitaker's, there is an eighteen-inch vein of brown ore and sulphurets, and a large quantity of "pay gravel." Near Springhope, on the Tar River, considerable surface washing is carried on. The Woodward-Hedgepeth tract, two miles from Nashville, has a large area of gravel, and lately a very strong vein three feet wide has been opened up. Other mines in this district are the Kearney, Taylor, Davis, Nick Arrington, and Harrison. The aggregate of the regular employees is seventy-five.

MOORE COUNTY.

The Huronian in Moore County has two belts—one ten miles north-west from Carthage, and the other eighteen. The Bell Mine is the only one worked in the former. Here occur rich quartz seams, assaying from \$30 to \$1,300 per ton, and strict averages of large working bodies run \$14 per ton. The Johnson Mine is to the south-west of the Bell.

Six miles north-east of the Bell is a large body of gold and silver bearing copper ore, and two and one-half miles north-east of the Chick is a body quite similar—the Phillips.

The second belt comprises a dozen well-known mines in a space three or four miles wide and six or eight miles long from north-east to south-west. The formation is everywhere very silicious. The veins are “bedded veins,” and are merely the richer parts of the auriferous strata. The Brown Mine, on the north-west edge of the district, has been worked for a distance of 300 yards, and to a depth of fifty or sixty feet. The Bat Roost and the Shields, near by, have also been largely worked. The Cagle Mine, one mile south of the Shields, and on the east edge of the belt, has 500 acres. The ore has a very small amount of disseminated pyrite, and assays from \$5.33 to \$39.88 per ton. Unlike most of the mines of this belt, the work is wholly underground. The Clegg Mine, one-fourth of a mile west, is made up of the same schists, and is worked by open cuts. The Morrell Mine is one-fourth of a mile south-west. The Burns and Alred Mine, one-half mile south of the Cagle, is perhaps the best example of this class of ore deposits. The formation is the familiar one of the district. The selection of places for exploitation is determined by practical tests. Large bodies of the ore will run from \$3 to \$5 per ton. Most of the work is done “open cut.” The Kendall and the Monroe are near by.

The mines of Moore County are, with few exceptions, massive bodies of low-grade ores, with a thin dissemination of sulphurets. To modest operations, with a cheap plant, many of these mines have been remunerative.

MONTGOMERY COUNTY.

In Montgomery County also the Huronian formation prevails, but the silicious schists give place to clay slates toward the middle of the county. The vein mines have been very prominent in the history of the State, but the gravel mines are less known.

There are three belts of auriferous territory in this county. The most easterly range embraces the Moore Mine on the north-east, the Reynolds, the Carter (near Troy), and the Sam. Christian and Swift Creek to the south-west. The Sam. Christian has gained a wide reputation as a producer of large and fine nuggets. The gold is found in old “channels,” in gravel, deeply covered with soil, and rarely occurs as “dust,” but generally as nuggets, weighing from five to more than a thousand pennyweights. The work is almost exclusively hydraulic.

The second and parallel belt is four to six miles north-west, and comprises a line of “gravel” mines on the north-west of the Uwharrie Mountains, and between it and the Uwharrie River. The better-known localities are the Bright, Ophir (or Davis), Spanish Oak Gap, Dry Hollow, Island Creek, Deep Flat, Pear Tree Hill, Tom’s Creek, Harbin’s, Bunnell Mountain, Dutchman’s Creek, and the Worth Mines, the latter being near the junction of the Uwharrie and the Yadkin. These properties have never been adequately worked, as the water-supply is entirely inadequate. Some of them have large bodies of ores. The Tebe Saunders Mine is near the Worth. It was discovered by accident in 1889.

Several stringers were exposed which contained gold in abundance, and work proceeded for some time with great vigor, till the exhaustion of the pocket left only vein matter of ordinary value.

The third belt is a little further to the north-west. The more prominent mines of this belt are the Steele (or Genesee), Saunders, Henderson, Appalachian, Morris Mountain, Russell, Little Russell, McLean's Creek, and Beaver Dam. The first three named carry largely argentiferous or auriferous galena. The Appalachian, Morris Mountain and both the Russells are bedded ore masses. The last two on the list are gravel mines. The Steele (or Genesee) Mine is on the east side of the Uwharrie, and about two miles south of Eldorado village. The schists here are very quartzitic. The ore deposits vary from twelve to twenty feet in thickness. The most valuable part of this deposit consists of narrow "string veins," in which the gold occurs in relatively large quantity. The associated mineral matter is galenite, blende, chalcopyrite and pyrite. The "string veins" are sometimes fabulously rich, while the concentrated pyrites form a material of respectable value, but very refractory. The Saunders is the north-east extension of the Steele.

The Russell Mine is located in the north-west corner of Montgomery County. It has been worked very extensively, and has allowed better opportunities for study than any other, and hence will serve as a type of several mines in this region. The schists are the familiar silicious talcose or chloritic schists of the section, and contain in the ore channels from two to four per cent. of disseminated pyrites. There is no appearance of a fissure vein at this mine. The entire formation is gold-bearing, but only certain strata contain it in quantities large enough to warrant work. The gold-bearing material is of low grade, assaying, as ordinary material, \$2.27 to \$9.95 per ton. The auriferous territory is fully 2,000 feet across the formation from north-west to south-east. The Morris Mountain Mine, a tract of 350 acres, is in this neighborhood.

The Appalachian (or Coggins) Mine is one mile south of the Russell. The schists resemble those of the Russell. The mine, as far as developed, shows large bodies of low-grade ores, similar to those of the Russell, yet ores that are easily within the limits of profitable work.

The Beaver Dam Mine at Flaggtown contains 800 acres, one-half of which is claimed to be underlaid by gravel. There are numerous seams of auriferous quartz, and a massive body of chloritic schists, carrying gold. The work has been done by hydraulic methods.

RANDOLPH COUNTY.

Randolph County, like Montgomery County, abounds in mines, and not less than thirty are well known. Of these the more noted are the Sawyer, Winslow, Lafflin (or Herring), Jones (or Keystone), Davis Mountain, Winningham, Slack, Graves, and Hoover Hill. All these mines are in the "slate," and the belts are probably continuous with the western ones of Montgomery.

The Jones (or Keystone), the Lafflin (or Herring), and the Delft, are quite similar in character, and a description of the Jones will indicate the characteristics of the others. It has been very largely worked.

This mining tract has $293\frac{1}{2}$ acres, and is twelve miles nearly south-east from Thomasville. The schists are soft and weathered to a great depth, which has brought about a peroxidation of the ferruginous constituents. Gold is universally present, but the mining is confined to certain richer belts. Occasional masses are charged with finely disseminated iron pyrite, slightly altered. The working strata differs little from the unworkable. Two of these belts have gained especial prominence, one being 50 feet wide, and the other 110 feet. The mine is simply a series of ore quarries, and is worked "open cut" as a quarry. The disintegrated condition of the rock or soil allows of mining at a marvellously cheap rate, frequently not exceeding fifteen cents per ton of ore delivered at the mill-house. The material is low grade, but it changes perpetually in its contents, and bodies of relatively high grade may be met at any time. Assays give \$2.07 to \$28.94 per ton. Strict averages of large bodies give fairly uniform assays, so that it may be said with fairness that the average of working bodies will not fall under \$3 per ton. The treatment is by stamp battery, but hydraulic methods might also be pursued if a cheap supply of water were available.

The Parrish Mine adjoins the Jones. The ore body is hornblendic and chloritic, and sometimes very rich, assaying from \$14.90 to \$88.50.

The Hoover Hill Mine is located seventeen miles nearly south from High Point, and comprises 250 acres. In its early days operations were very profitable. The "county" is apparently an altered schist, very hard and compact, traversed by belts abounding in quartz seams, and, both above and below, these belts have been the productive part. The old "Briols Shoot" was the most productive, and is now down 350 feet. The gold is uniformly associated with the quartz seams. Iron pyrite is generally present to the extent of three per cent. The Wilson Kindley Mine is one-half mile south-west.

It will easily be seen from the above brief description of Montgomery and Randolph Counties that the extent of the auriferous wealth is beyond our present power to estimate. Probably no other equal area of the State has anything to compare with it.

The solution of the problem of putting these vast and unique stores of gold into the channels of commerce lies, if a conjecture may be hazarded, not so much in the introduction of any new "process," which will supersede amalgamation, as in the cheapening and perfecting the art of mining, and in the increased efficiency of the modes of amalgamation, with chlorination as an auxiliary, following a well-devised system of concentration.

STANLY COUNTY.

In Stanly County the more noted mines are the Haithcock and Hearne, two miles north-west from Albemarle. The Haithcock is the northern extension of the Hearne, and itself merges to the north-east into the Lauder.

The Parker Mine, at New London, embraces four mining tracts, aggregating $827\frac{1}{2}$ acres, and is in the midst of a very important mining district. There are three well-known veins on this tract, and large

areas of valuable "gravel," which is not only diffused generally over the surface, but is largely concentrated in the beds of the various streams running through the properties. This gravel contains from eleven to nineteen cents to the cubic yard, and the quartz and vein matter assays from \$4.23 to \$7.38 per ton.

Part of the Gold Hill District is in Stanly County.

UNION COUNTY.

The mines of Union County are readily traceable in alignment with Gold Hill, Silver Hill and other mines of Davidson County, and are for the most part comprised in this belt, which stretches in close proximity to the "granite area" along its eastern edge. This belt commences about the middle of the eastern boundary of Davidson County, and extends seventy-five miles south-westwardly to South Carolina, and most of this stretch from Gold Hill southwardly is, with scarcely a break, crowded with mines. The ores are readily classified into auriferous and argentiferous galena, auriferous pyrite, and auriferous slates with disseminated sulphurets.

The Washington Mine, eight miles south-west from Monroe, is the most southerly of the important mines of the county. The Wyatt is one-fourth mile west of the Washington, and is probably part of the same vein. The Howie is one mile and a quarter north-west of the Washington, and has been worked to a depth of 300 feet. The ore is quite like that of the Washington, and has numerous seams of quartz, which is generally associated with the richer ores. The yield of this mine has been estimated at \$750,000. The vein is 400 feet wide. The working ores assay from \$2.05 to \$43.06 per ton. Between the Howie and the Davis, two and a half miles north-east, are no known mines. Then occurs the Davis, Phifer, Lewis and Hemby nearly in the same alignment—a stretch of nearly two miles. The whole deposit has been enormously rich, especially the Phifer. In this immediate neighborhood are the Moore Hill, Harkness and Folger Hill. One-half mile north-east of the Hemby is the Smart, which carries galenite; and one mile and a half still further north-east is the Black, with ores assaying \$10.68 to \$168.31 per ton. The Crump Mine, four miles from Stout's Station, is noted for its remarkable pockets of splendid nuggets. North-east of the Hemby are several important localities which have been successfully worked—the Long, Henry Phifer, Crowell (Bright Light), Fox Hill, Secrest, Dulin, Moore, Stewart, Lemmons and others. The last three have galenite.

The Stewart is toward the northern part of Union County. It has been worked, and has yielded rich ores. The assays run from \$14.01 to \$48.89. The belt soon passes into Cabarrus County.

CABARRUS COUNTY.

The Rocky River Mine is ten miles south-east from Concord, and includes two mines with seven veins, carrying quartz, iron pyrites, and galenite ranging from \$5.97 to \$67.42 per ton. The Allen Furr Mine, two and a half miles distant, shows a large amount of massive iron pyrite, with a little galena.

The Reed Mine is near the Rocky River Mine. This mine was the first to give celebrity to the gold fields of the Appalachian range. The first nugget was found in 1799, and the largest recorded nugget (weighing twenty-eight pounds avoirdupois) in 1802; and for a period of forty years thereafter a steady stream of nuggets poured forth from this place. The proportion of nuggets, both for number and for size, has never been paralleled on this side of the continent. There are also several veins on this tract of 780 acres.

The Phoenix Mine, eight miles south-east from Concord, had reached a depth of nearly 400 feet, when the growing difficulties of working it led to its abandonment. The Thies chlorination method was developed here and used successfully for several years in connection with the ordinary mill treatment, and resulted in the economical extraction of gold to a high percentage (90 to 95 per cent). The whole establishment was a model of skilful and successful adaption of familiar methods. Assays, \$8.27 to \$63.01 per ton.

The Joel Reed Mine, in the edge of Concord, has been worked successfully on a small scale for a long time. The Allison and the Montgomery mines, two miles north of Concord, have been profitably operated.

The McMakin Mine (or Silver Vein), in the Gold Hill District, had reached a depth of 181 feet, when the war caused a suspension of work. The ore is complex—blende, galena, pyrites and highly argentiferous tetrahedrite. Assays run from 12 to 500 ounces of silver per ton.

This Gold Hill District is the most noted as well as the most productive in the State. It is situated in the south-eastern part of Rowan County and the north-eastern corner of Cabarrus, and overlaps slightly into Stanly. It is nearly one mile and a half long from north-east to south-west, and two-thirds of a mile wide. The striking characteristics of this district are the great permanency of the veins and the variety and richness of the ores. The entire series is situated on the narrow plateau of a low-lying north-east and south-west ridge, and is one mile east of the granite, and in close contact with a diorite group to the east. The prevailing rock is a chloritic argillaceous schist. There are at least ten well-defined veins in the district, prominent among which are the Randolph, Hunnicutt, Barnhardt, Open Cut, Trautman, and McMakin, but closely associated are outlying bodies, which may be independent veins.

The Randolph vein, nearly the extreme north-west mine of the group, is *par excellence* the *Gold Hill Mine*, and has been worked a linear distance of 1,500 feet, and to a depth of 740 feet. There are three principal shoots of ore which have been exceedingly rich, but in the lowest levels they have become of lower grade, though still abundant.

The Barnhardt, 400 feet to the east of the Randolph, is worked to a less depth. The ores are like those of the Randolph. The Standard Vein has been worked to a depth of 84 feet. The body of ore is comparatively wide. The Trautman gold vein was worked to the depth of 24 feet as a gold mine, but below this level and down to 60 feet a variety of lead minerals occurred. This vein is nearly at the extreme south-east of the group.

DAVIDSON COUNTY.

Very little mining work is now done in this county, and only the more important mines will be briefly alluded to.

The Lalor (Allen) and Eureka are at Thomasville.

The Conrad Hill is seven miles east of Lexington, with seven veins, of which six have been worked, ranging from two to fifteen feet in width. The vein matter is quartz, chalcopyrite, with various copper minerals, resulting from decomposition. Carbonate of iron is a common accompaniment, but, excepting the latter, the mine matter is remarkably destitute of all distinctive iron minerals. The operations looked to a final production of gold bullion and refined ingot copper. The general course of metallurgical treatment was as follows: The mine matter, after the usual cobbing, etc., was picked and the richer ore sent to the copper works. The residues, after passing through a Blake crusher, were jigged, and the best material added to the above richer material. The poorest stuff from the jigs was rejected, and the medium grade sent at once to the stamp-mill and amalgamated as usual. The tailings were concentrated and the concentrates sent to the copper works. The material rich in copper was, after roasting, smelted in a shaft furnace for matte, from which, after resmelting, etc., a black copper was obtained and refined. The Hunt & Douglas process was found to be more efficient than smelting, and was largely used. The residues from the tanks, now mostly peroxidized, were sent to the battery for amalgamation. The greatest depth reached was 400 feet. The assays run from \$13.39 to \$94.12, and from a trace to 30 per cent. of copper.

The Silver Valley Mine is twelve miles south-east from Lexington. The vein is from five to twelve feet wide. The ore is galenite with blende, the latter sometimes predominating. This large per cent. of zinc has hitherto been the only difficulty in the way of an extensive employment of the resources of this mine; and the variety of experiments, both mechanical and metallurgical, which have been directed to the problem of treatment, have at best only partly ameliorated the status, as is shown in the following analyses of the concentrates:

	<i>Poor Concentrs.</i>	<i>Rich Concentrs.</i>
Gold, per ton.....	\$ 4.13	\$ 4.13
Silver, per ton	9.58	38.06
	<u>\$13.71</u>	<u>\$42.19</u>
Lead, per cent	11.18	47.62
Zinc, per cent.....	27.76	12.68

The raw ore contains—

Gold, per ton.....	trace	\$ 4.13	trace
Silver, per ton.....	\$13.30	150.15	\$32.45
	<u>\$13.30</u>	<u>\$154.28</u>	<u>\$32.45</u>
Lead, per cent	15.89	55.25	38.80
Zinc, per cent.....	31.45	11.24	32.

More recently the ore has been used for a mixing ore at the smelting works at Thomasville.

The Silver Hill Mine is ten miles south-east of Lexington. It was originally known as the Washington. Here are two nearly parallel veins, with some large but subordinate bodies. At the commencement the vein was supposed to be a gold vein, but at the depth of eighty feet it was found that the vein was lead-bearing silver ore, with gold as an incidental. Ultimately the ore was found to contain argentiferous blende and galenite. Analyses show for the compact galena—

Gold, per ton.....	\$4.14	\$6.20	\$4.13
Silver, per ton.....	2.75	9.17	9.55
	<hr/> \$6.89	<hr/> \$15.37	<hr/> \$13.68
Lead, per cent.....	22.94	56.72	12.57
Zinc, per cent.....	7.14	-----	34.29

After a great variety of futile efforts to treat this ore, the work was abandoned. This mine has been worked to the depth of 725 feet. The latest exploitation of this mine was in the shallow parts, where a considerable body of "carbonates" was uncovered, which proved of fair grade as to silver contents. The difficulty of treating this ore, as in the case of the Silver Valley ores, is so great as to preclude it from general metallurgical purposes.

On the Ward property, two miles east of Silver Valley, are four nearly parallel veins, and a large amount of surface suitable for hydraulic treatment.

The Welborn, two miles west of Silver Hill, carries ores greatly resembling those from the latter mine. The Symons Mine, near by, has good brown ore.

The Davidson (or Emmons) Copper Mine is situated two miles south-east of Silver Valley. It was extensively worked for copper down to a comparatively late date, and was exploited to a depth of 416 feet on the incline. The vein is six feet wide.

The Cid is one mile and a quarter north-east of the Emmons, and has ores quite similar, but apparently may carry the precious metals to a somewhat higher per cent.

The following mines may be mentioned as not being capable of grouping: The Hamilton and the Jesse Cox mines, in Anson County, near Wadesboro. The ores of the former assay fairly well.

GUILFORD COUNTY.

In Guilford County are found the following mines: The Fisher and Millis Hill, Hodgins, North Carolina (or Fentress), the Gardner, the Twin, North State (McCullough), Lindsay, Jack's Hill, Deep River, Beason, Harland, and Beard. None of these are now worked.

ROWAN COUNTY.

The mines in this county in the slate belt have been described in the mention of the Gold Hill District. There is an approximation to belts in the mines of this county. One of these belts is found to the south-west of Salisbury, comprising, among others, the Hartman, Yadkin,



VIEW FROM ROAN MOUNTAIN.

Negus, Harrison, Hill, Southern Belle (Aldrich), Goodman, Randleman, and Roseman. The workings in most of these have been comparatively shallow, and only one, the Aldrich, is now operated.

A second belt occurs two and a half miles east from Salisbury, prominent among the mines being the Dunn Mountain, New Discovery, the Reimer, and the Bullion.

A third belt is in the south-eastern part of the county, where there are more than a hundred mineral localities, and as many more in the adjacent parts of Stanly and Cabarrus. The mineral veins of this section are of fair width, and all carry sulphurets of fair grade.

MECKLENBURG COUNTY.

Gold is probably more widely diffused in Mecklenburg County than in any other county of the central part of the State, for in this area of thirty by twenty miles are well-nigh one hundred mines. Hardly more than an enumeration can be attempted. Charlotte is the centre of a mineral district, and around it on all sides are mines, among them the following: Davidson, Blake, Point, Parks, Clark, St. Catherine, Rudisil, Smith & Palmer, McDonald, F. Wilson, Howell, Trotter, Carson, Taylor, Isenhour.

A second group is five to ten miles west and north-west of Charlotte, embracing the Hayes, McGee, Brawley, Frazer, Hipp, Campbell, Todd, Arlington, Capps, McGinn, Stephen Wilson, Trautman, Prim, Abernathy, Chapman, Dunn, Sloan, McCorkle, Cathey.

A third group is found around the Ferris, six miles north of Charlotte. Still another group is situated in Providence township, and about Sardis Church, some five to ten miles eastward from Charlotte; among others, the Hunter (two veins), Trediwick, and Ray (three veins).

The Pioneer Mills group of Cabarrus County extends into Mecklenburg. Of those in this county may be named the Johnson, Sinson, Maxwell, Black, and Harris. Other mines on the extreme eastern edge of the county are in the "slate belt."

Of the above mines may be particularly mentioned those on Davidson Hill, one mile west of Charlotte, three in number, viz., the Davidson, Blake, and Point.

The Rudisil and the St. Catherine are respectively the northern and southern ends of the same vein, and have been worked more deeply and extensively than any others in the county. The Rudisil has reached a depth of 350 feet, and enjoyed for several years a large degree of prosperity from the exploitation of its three chimneys, especially from the "Big Ore Shoot." The subjoined assays show the character of the ores:

Gold, per ton.....	\$6 21	\$20.67	\$73.74	\$165.86
Silver, per ton.....	trace	.10	2.25	.35
	<hr/>	<hr/>	<hr/>	<hr/>
	\$6.21	\$20.77	\$75.99	\$165.71

The St. Catherine has reached the depth of 460 feet (155 feet vertical and 305 feet underlay, equivalent to 370 feet vertical). In this mine

also are several valuable chimneys, which allowed it many years of profitable work. The ores range in value from \$10 to \$180 per ton.

The Howell Mine is thought to be in the south extension of the Rudisil. It has been worked to a depth of thirty-two feet. The vein is two to four feet wide, and the ores assay \$5.64 to \$77.06 per ton. Its southerly extension is the Shuman, which is now worked at the depth of ninety feet. Its ores are of very good grade.

The Smith & Palmer Mine, one mile south of Charlotte, is in the Rudisil neighborhood. The deepest shaft is seventy-five feet. The vein is two to four feet wide. The ores run \$5.17 to \$149.52 per ton.

The Clark is two miles and a half west of Charlotte, and appears to have two vein systems. The ores have generally run well.

The Ray (Baltimore and North Carolina) has five veins on its property of 360 acres.

The Stephen Wilson Mine, nine miles west of Charlotte, has ten veins.

The Capps Mine is five miles and a half north-west from Charlotte. It is one of a group of veins closely united, of which two are convergent—the Jane (McGinn gold vein) and the Capps. The Capps has an ascertained length of 3,000 feet, and the Jane fully as much. The later work on the Capps has been restricted, and finally stopped, from legal considerations. The last work was done at the 130-foot level. This mine has been noted for the amount of ores it could produce, and for their superior grade. There are four well-known bodies. The ordinary run of ores assayed \$11.72, \$25.94, \$50.35 and \$18.03 per ton, the latter being a strict average of a large body.

On the McGinn mining tract are three veins, one of which is a gold vein, and one a copper vein. The gold vein has been worked to a depth of 150 feet. The run of ores is as follows: Gold, per ton, \$6.52, \$12.13, \$3, \$69.93, \$99.76. Copper, per cent., 4.55, 8.05.

The Cathey Mine is cupriferous as well as auriferous.

The Chapman Mine is eight miles north-west from Charlotte. The developments have reached a depth of ninety-five feet. Both brown ore and sulphurets proved good.

The Dunn Mine was the first discovered in the county, and not long after the finding of the nuggets at the Reed Mine. It has at least three veins, two of which have been worked to the 90-foot level. The ores assay from \$4.26 to \$128.44 per ton.

The Ferris Mine is six miles north from Charlotte. There are two veins, and a third on an adjoining tract, worked in the same connection. The ores have been of more than average grade.

The Harris Mine is ten miles nearly east of Charlotte. The stretch of mining property upon which this mine is situated is known to have rich gravel. Surface Hill, one of these localities, is famous for its rich nuggets, and occasional pockets of ore are found of extreme richness.

The Elliott plantation, five miles south of Charlotte, has several veins of auriferous copper ore.

The Means Mine is five miles north-west from Charlotte, and has a vein of unusually fine free-milling ore.

GASTON COUNTY.

Only two mines are operated in this county—the Catawba and the Long Creek.

The Catawba is one mile and a half south from Kings Mountain Station, on the Air-Line Railroad. It is in the limestone belt. When the work at this mine had reached its settled condition, the ore body was found to be limestone charged with a small percentage of sulphurets, including a little galenite, and the very rare mineral altaite. Nearly the whole formation is gold-bearing, and sometimes rises to a thickness of sixty feet. The following assays show the character of the ores: \$5.65, \$3.35, \$7.42, \$77.08. The great width of the ore bodies, the ease with which the ore is mined and milled, and the small amount of sulphurets, combine to make even the low grades profitable.

The work done at present on the Long Creek (McCarter) Mine is at the bottom of the main shaft, where a fine body of pyrites of more than ordinary grade is found, and in the Whim shaft, 150 feet south-west. Both mining and milling are proceeding vigorously. This property has two other veins—the Dixon and the Asbury.

Among other mines in Gaston County may be mentioned the Oliver, Farrar, Rhyne, Derr, Rhodes, Robinson, Smith, Crowder's Mountain, and Patterson.

The Duffie has a large vein, from two to ten feet wide, and has been worked to a depth of 110 feet, at which depth a very large body of sulphurets was found, assaying from \$4.13 to \$16.99.

LINCOLN COUNTY.

The only prominent gold mines in this county are the Hoke, Burton, and Graham.

CATAWBA COUNTY.

The only mine now worked is the England Mine, near Newton, and here the operations are not extensive.

The Shuford Mine, four and a half miles northeast of Catawba, had for a long period been a large producer in the way of placer work, but the gradual exhaustion of these placers, and the failure to find veins of importance, led to the ultimate abandonment of the operations. The A. D. Shuford Mine is three-fourths of a mile south-east.

DAVIE COUNTY.

The only prominent mine is the Butler (or County Line) Mine, eight miles south-west of Mocksville.

CALDWELL COUNTY.

At Baker Mine, Caldwell County, there are four veins, and the ores contain considerable rich galena. Other mines near by are the Pax's Hill and the Corpening. The extreme north-west corner of the county has, in the last two years, received considerable attention, but no important mines have yet been discovered, though some promise well. Among these are the Grigg, Finzey and the Rattlesnake.

ASHE COUNTY.

No mines are now operated in Ashe County except the Copper Knob (Gap Creek). On this tract of 190 acres are three veins, one of which has been followed to a depth of 140 feet. The ore seam, varying from four to six inches in width, is filled with vitreous copper ore, etc., and a little brown ore. The contents of this ore are shown below:

Gold, per ton.....	\$34.79	\$57.36	\$77.51
Silver, per ton.....	19.72	11.24	35.33
	<hr/>	<hr/>	<hr/>
	\$54.51	\$68.60	\$112.84
Copper, per cent.....		23.82	37.44

THE GOLD GRAVELS AND ACCOMPANYING VEINS OF THE PIEDMONT AND MOUNTAIN REGIONS.

The gold gravels in North Carolina have a distribution as wide as the crystalline rocks. The deposits in Montgomery County have already been described, but those of the mountain section are deserving of separate notice. The source of the gold of these gravels is to be found in the numerous quartz veins, which penetrate the altered crystalline schists in innumerable number, and which, through the weathering process, have been concentrated in basins and channels and beds of streams. The South Mountain area is comprised in the space of some two hundred square miles in the coterminous parts of Burke, McDowell and Rutherford Counties. The mining in this section has been very extensive for seventy-five years, but is now languishing. The operations of the past were necessarily confined to such deposits as lay near water, and when these were exhausted work was in a great measure abandoned. The work of the future will be on the deep-lying gravels, which require expensive treatment with powerful hydraulic means, and on the treatment of the numerous veins which course through the strata. Individual veins will rarely allow of profitable treatment, but collectively will frequently justify work by hydraulics.

The following localities may be enumerated: The Golden Valley, Lawson Smart, Grayson, and Gamble, in Rutherford County. In Burke County, the Hancock, Glen Alpine, Carolina Queen, and J. C. Mills. The latter has long been worked, and has abundant resources for much larger operations.

The more important mines in McDowell County are the Vein Mountain, Hunt's Mountain, and the Granville. The first and second are owned and operated by one company. The tract comprises 6,800 acres. Vein Mountain is well supplied with water, and extensive work has been done in the rich gulches, some six or eight in number, and on the veins, of which twenty or more have been uncovered. The following line of assays indicate the character of these ores: \$2.58, \$4.13, \$5.21, \$10.33, \$13.57, \$74.48 per ton. The Granville Mine contains 1,600 acres.

The production of this mountain area is estimated to have been at least \$2,000,000 to \$3,000,000.

The Polk County deposits, some twenty-five miles south-west, appear to be an extension of the South Mountain area, and while the deposits are valuable, the section is to a great extent lacking in those natural advantages which in the South Mountains constitute so prominent a feature of the work. The best known localities are the Patty Abrams, Wetherbee, Red Springs, Tom Arms, Splawn, Ponder, Riding, L. A. Mills, Carpenter, Hamilton, Neal, MacIntire, Double Branch, and Prince. The Splawn has a massive vein of low-grade quartz.

Vein mining in Rutherford is confined to the Wallace and Idler, four miles north-east of Rutherfordton, and to the Elwood and Nonanta, near by. The ores are sulphurets of fair grade.

No mining is carried on in either Wilkes or Watauga, though limited areas of gold gravel are found in both counties.

In Henderson County, at Boylston Creek, gold has been for a long time obtained, but more recent explorations have disclosed an enormous deposit of gold-bearing quartz and schists, which extend in a north-east and south-west direction for a distance of more than two miles, and probably accompanied by parallel bodies of ore. This ore contains a small per cent. of sulphurets, and is of relatively low grade, but exceedingly abundant.

There are two other gold regions—one in Cherokee, the other in Jackson—where gold deposits occur of sufficient richness to warrant consideration.

The gold of Jackson is obtained almost entirely from placers situated along the southern slopes of the Blue Ridge, near Hogback and Chimney Top Mountains. The most important locality is Fairfield Valley, along which these deposits extend for several miles, and are by no means yet exhausted. The origin of the gold is doubtless to be sought in veins in the Blue Ridge to the north and east, along the base of which Georgetown Creek has cut a deep channel.

The deposits in Transylvania, east of the Blue Ridge, on the head waters of the French Broad, are supposed to be a continuation of this same belt, and to have a similar origin.

In Cherokee County the gold belt is in the same body of soft slates and schist, which carry the limestone and iron (see chapter on iron), and is found both in placers and in veins. The sands of Valley River yield profitably through a large part of its course, and along some of its tributaries. South-east of the limestone is also a series of "diggings" along the lower slopes of the mountains from near Valletown to Vengeance Creek, a distance of twelve to fifteen miles. Other minor belts are also known in this section.

SUMMARY:

Production of Precious Metals in 1891, coining value (Report of the Director of the Mint)	\$101,465
Number of men regularly employed in 1892	882
Number of men occasionally employed in 1892	100
Number of stamps in 1892	520
Number of Chilian and other mills in 1892	10
Smelting establishments in 1892	1

SILVER, LEAD AND ZINC

Do not abound in this State. As a rule they are associated.

Native silver has been found in some quantity at Silver Hill, and has been observed occasionally at the McMakin and Trautman mines at Gold Hill, and at Copper Knob, Ashe County. Sulphuret of silver is also reported to have been seen at the last mine; chlorides and bromides, with the associated minerals, are found only in minute quantity, and are of no value commercially. Silver is universally present with the gold in proportions ranging from twenty to five hundred one-thousandths in fineness.

Zinc ores are, in this State universally associated with galena, and lead ores free from blende are rare.

Brief allusion has already been made to these places, and they are mentioned again merely for convenience.

Auriferous and argentiferous galena with blende is found at the Phifer, Lewis, Davis, Hemby, Smart, Moore and Stewart mines in Union County; at the Rocky River, Allen Furr and McMakin in Cabarrus; the Trautman, at some slightly known localities in Rowan, and in large bodies at Silver Hill and Silver Valley in Davidson County, and at the Steele and Sanders mines in Montgomery.

Flint Knob, in Wilkes, and Baker Mine, in Caldwell, may also be enumerated. A very small proportion of galenite is also found at the Catawba Mine in Gaston County.

COPPER.

In the chapter on gold the mines containing copper have been sufficiently discussed, and they are merely summarized here, the reader being referred to that chapter for assays and other particulars. Prominent among these localities are: the Gardner, North State, Lindsay, Fentress and Hodge's Hill in Guilford; the Conrad Hill, Emmons and Cid in Davidson; in Rowan, the Gold Hill; in Cabarrus, the Phoenix and Pioneer Mills; in Mecklenburg, the Ray, Ferris, McGinn, Hope-well, Cathey, Elliott, Crosby and Dunn; in Randolph, the Spencer; the Clegg and Chick in Chatham; the Foust in Alamance; the Burrell-Wells in Gaston; the Graham in Lincoln. These ores are auriferous as well as cupriferous, and in any rational treatment both metals should be taken into account.

Of the copper mines which carry no gold, or too little to be of any account, the following localities may be described:

In Granville and Person Counties is a remarkable series of copper mines, commencing just a little south of the Virginia line and stretching south-west some ten or twelve miles. Among the more important mines are the Royster, Tuck and Silver Nugget mines near Blue Wing, then the Holloway, two and one-half miles south-west, with two veins; the Mastodon Mine, near the Granville-Person line, the Poole, one-fourth mile west, and the Buckeye Mine; the Gillis Mine, the earliest discovered of the group, is one mile south; there are four or five veins on this tract; the Copper World is in Person County one and one-half

miles south-west from the Gillis, and still further south is the Yancey Mine, with two or three veins.

At none of these mines is the ordinary yellow sulphuret of copper abundant; on the contrary, the ores are black sulphuret of copper, vitreous copper ore, or some one of the allied high-grade copper sulphides. At the Royster (Blue Wing) Mine, thirty-five to forty men are employed. The run of the mine assays $5\frac{1}{2}$ to $8\frac{1}{2}$ per cent., which is concentrated to 20 to 50 per cent.; about fifty tons per day are mined. The product is shipped to the Orford Copper Works.

The copper belt of Jackson and Haywood occupies the middle portions of those counties, from the head waters of Tuckasegee River to Savannah Creek, the principal points being Waryhut, Cullowhee and Savannah mines. At least twenty places may be enumerated in this section where copper ores occur, but in what abundance is not known.

The occurrence of copper at Copper Knob, Ashe County, has already been pointed out. The most remarkable vein in the State is at Ore Knob, in Ashe County; it has been proved by trial shafts for nearly 2,000 feet, and its thickness is six to fifteen feet, and sometimes twenty. The ores of the upper part of the mine were of very high grade, but at the depth to which the work was finally prosecuted (400 feet), the contents had fallen to 4 or 5 per cent. of copper, which did not allow of profitable work at the low price of the metal; and in the face of the competition of the more favorably situated Lake Superior mines, operations ceased in 1882. From 1873 to 1880, the results of a very complete smelting and chemical plant were satisfactory.

The Peach Bottom or Maxwell Mine is in the western part of Alleghany County. The ore is almost entirely chalcopyrite; iron pyrite is almost wanting. The ore is scattered in grains in a decomposed gneiss, and is susceptible of easy dressing. The vein has been operated for several hundred feet in length, and to a depth of 140 feet: the width varies from four to six feet.

On Moseley's farm, in Surry County, five miles from Elkin, is a vein carrying yellow copper ore. Near Trap Hill, Wilkes County, on the east side of Bryan's Knob, is a bold outcrop traceable for nearly four miles, and everywhere carrying pyrrhotite and pyrite, with a small percentage of chalcopyrite, frequently auriferous.

At present no copper is produced in North Carolina, but ores are shipped from the Granville County district. The present price of copper, and the condition of the trade, are not favorable to the speedy development of this mineral resource.

THE IRON ORES OF NORTH CAROLINA.

In every part of the State, and in great variety, are found magnetic ore, hematite, limonite, and some siderite. Those from the older formations are commonly free from phosphorus and sulphur, but sometimes contain titanium, etc.

A cursory survey of the geographical occurrences may properly precede this chapter. The ores of the Quaternary are limonite, and in deposits shallow and of limited extent.

In the Upper Laurentian and the Huronian are: Gaston and vicinity, in Halifax County, five points; Granville and Person Counties, several localities; Durham County, beds at Red Mountain; and at Chapel Hill in Orange County; in Cleatham County, in six veins at or near Ore Hill, and at Buckhorn Falls; in Randolph and Montgomery Counties, in at least twenty-five localities.

The Tuscarora and Highfield Ranges in Guilford and other northern counties occur in a belt more than thirty miles long. Commencing in Iredell County, and extending through to Gaston County and far into South Carolina—a stretch of nearly sixty miles—is a still more remarkable belt. Near Danbury, Stokes County, is a belt quite similar to the above.

Surry and Yadkin Counties have several localities; Burke, McDowell, Rutherford, Caldwell, Alexander and Wilkes have numerous beds; in Ashe County are three belts; in Mitchell County is the famous Cranberry deposit. Other beds of magnetic ore exist in the same section, and, in truth, so numerous are these localities in Buncombe, Madison, Jackson, Haywood, Mitchell, Macon and Swain Counties, that they have hardly become known outside of their respective neighborhoods.

The iron deposits of Cherokee are largely of the limonite variety. The coal measures of the Deep River region contain beds of argillaceous carbonates and black band ore. It will be observed that few parts of the State are destitute of iron deposits. These mines will be grouped geographically for more detailed statements.

LIMONITE ORES OF THE EAST.

The earthy accumulations of this section in the Quaternary and Tertiary frequently contain beds of earthy or nodular limonite. A deposit occurs in Nash County near the Wilson line—the Blomary mine—where blooms have been made on some scale. At Boney's, near Wallace, in Duplin County, is another deposit. A bed is also found at Rocky Point, Pender County, and on Tranter's Creek, in the eastern part of Pitt. Edgecombe, Halifax, Pitt and Robeson show several other localities. They are found in shallow basins of slight extent, and rarely contain any large amount of ore, which ranges in contents from 40 to 55 per cent. in iron, and without injurious amounts of either sulphur or phosphorus. Picking and washing raises this occasionally to 60 per cent., and makes an ore suitable for shipping, or for treatment in the Catalan Forge, in the production of superior iron for local use.

On both sides of the Roanoke River, near Gaston, in Halifax County, are five localities occurring over a stretch of territory five miles long, and the scattered "float ore" as far south as Hines' plantation would indicate an even more extended range. Only two points have been worked, the ore from which is of good grade and great purity: Iron, 53.31 to 58.73 per cent.; sulphur, none to 0.03, and phosphorus, none

to 0.05 per cent.; it inclines to be granular, and consists of both specular and magnetic iron. Other less-known places are near Smithfield and Leachburg, and at Whitaker's, seven miles south-west from Raleigh, at both of which places are notable outcrops of limonite. The metallic resources of these recent formations have been little investigated.

The Buckhorn Mine, on the Cape Fear River, in the western part of Harnett, is a magnificent deposit of manganiferous hematite occurring on a hill 200 feet high. The vein is from twenty to thirty-six feet thick. The ore is admirably adapted to the manufacture of spiegel-essen, and carries:

Iron.....	55.00 to 66.50 per cent.
Manganese.....	5.23 to 15.87 per cent.
Phosphorus.....	.02 to .04 per cent.
Sulphur.....	.02 to .06 per cent.

One mile south-west is another locality of similar character, the Douglas Mine; two miles north is the Dewar Mine, and one mile north-west is the Pegram Mine, a vein of magnetic ore with four to six per cent. of manganese. The iron manufactured from these ores makes a very superior material for car-wheels, &c. This range extends ten to twelve miles south-west, and several places are known yielding a fine and rich magnetic ore.

The Triassic, immediately adjoining the Quaternary on the west, and extending for about one hundred and twenty-five miles from Durham County south-west to Anson, and with a recognized width of five to twenty miles, may, from an economical point of view, be summarized in the following paragraphs:

At Knap of Reeds, in Durham County, nearly at the Granville line, are several beds of siliceous red hematite, viz:

Iron.....	33.15 per cent.
Sulphur.....	.03 per cent.
Phosphorus.....	.08 per cent.

Near Haywood, in the angle of Haw and Deep Rivers, is a series of beds of red ochreous ore or limonite. This ore makes its appearance again near Sanford, twelve miles south-east. The black band or ball ores or kidney ores of the coal measures are imbedded in and coextensive with the coal measures at Deep River, and at several places outside of this locality. The shaft in the Egypt coal mine shows three of these seams of ball ore, and two of black band; these beds vary from sixteen inches to six feet in width. Most of these ores are apt to be of low grade in iron, and to carry much sulphur and phosphorus.

The Evans property (two veins) is six miles north of the Gulf. The ore is hematite, with contents in iron 32 to 60 per cent., and hardly more than traces of sulphur and phosphorus. The Ore Hill Mine at Ore Hill, on the Cape Fear River, and on the Yadkin Valley Railroad, in Chatham County, is a most conspicuous property. Here are six or more veins, two or three of which may possibly reach to ten or fifteen feet in thickness. The ore ranges from limonite to hematite, with contents in iron 47.87 to 58.70 per cent., traces of phosphorus, and sulphur 0.23 to 0.28 per cent. Connected with the above two properties, and in

close proximity, are three other properties, all operated to supply a fine steel plant at Greensboro. It may be mentioned that several other localities in this section show large amounts of "float" ore. In Granville County, at Seth Post-office, eight and one-half miles east of Blue Wing, is an iron locality.

In the Huronian, in Person County, at Mount Tirzah, is a mine of specular iron, which during the late war supplied a furnace near by. A recent sampling gives:

Iron	41.98 per cent.
Sulphur	trace.
Phosphorus	0.14 per cent.

Some six miles south-west, in Durham County, at Red Mountain, is an iron locality. A fine quality of magnetic iron is found on the east side of Haw River at Tyrrell's Mount, where the vein is reported to be three to four feet wide; also at Cheek's farm, three miles south-east of Chapel Hill. A fine micaceous hematite is found in Orange County near the mouth of Collins' Creek. Five miles south-east of Hillsboro a fine vein of magnetite is traceable for one-fourth mile. Hematite is also found on the Hastings place, and at the railroad bridge over the Eno River, one half mile west of Hillsboro; also in four other localities from three to five miles west and south-west of the same town. Surface specimens, both of magnetic and hematite, from various parts of the county indicate large underground stores.

But the most notable ore bank in Orange County so far opened is at Chapel Hill; it is situated on a hill one-half mile north of Chapel Hill, and more than 200 feet above the creek at its base. The vein carries hematite, and is seven to ten feet wide at the main shaft, and with an enlargement to twenty-five or thirty feet near the second shaft. A second vein, five or six feet wide, crosses the former vein near shaft No. 1. The average analysis of the ore is:

Iron	65.77 per cent.
Phosphorus	0.025 per cent.
Sulphur	0.11 per cent.

There are surface indications on the hills both to the north-east and to the south-west for several miles, which seem to connect this occurrence at Chapel Hill with the Evans vein in Chatham County, which has similar ore.

The ores of Montgomery and Randolph are found in the same great Huronian slate belt that constitutes the most notable feature of the middle region of the State, both geographically and mineralogically. At least twenty-five localities are known in these limits where considerable amounts of iron ore have been found, but so rugged is the country, and so destitute of cheap means of transportation, that hitherto there has been little inducement to exploit or even to search for them. The best known of these ores occur at Franklinsville, Randolph County, and another vein has been opened in the same county at Asheboro. Both carry specular hematite, and some of the strongest and most highly prized iron obtained during the war came from this

locality, and was devoted to the manufacture of shafting, etc. Near Troy is an occurrence of hematite and one of magnetite.

One of the most persistent ranges or series of beds of iron ore in the State crosses the county of Guilford in a north-east and south-west direction, passing about ten miles north-west of Greensboro, near Friendship. It extends from the head waters of Abbott's Creek, in Davidson County, entirely across Guilford to Haw River, in Rockingham (and possibly beyond), a distance of thirty miles, making its appearance on nearly every plantation and hillside. The ore is magnetite, and everywhere titaniferous. About three miles to the north-west occurs a similar and nearly parallel belt, and the relative positions of the two make it highly probable that they are the exposed edges of a synclinal basin of three miles in width, the Tuscarora Range being the south-eastern and the Highfield or Shaw's the north-western. The average width of the veins is claimed to be fully four feet.

The range of contents is shown below in the average of ten samples:

Iron	54.61 per cent.
Titanium	8.07 per cent.
Sulphur and phosphorus.....	slight.

There are also other iron localities in Rockingham which do not belong to this range: for example, near Madison and two miles below Morehead's factory is a ten-inch seam of red hematite of high grade.

The Central Lower Laurentian belt from Guilford to Mecklenburg Counties shows no deposits of any extent, though surface specimens are found in many places.

In the counties of Gaston, Lincoln and Catawba is one of the most extensive ore ranges in the State, as well as the best known, for it has been extensively worked for nearly a hundred and twenty-five years, and has been the principal source of the domestic supply of iron during that period. The ores are sometimes magnetic, but more frequently hematitic, and are found in the talcose and quartzitic schists, sometimes called the Kings Mountain slates (Huronian). For a detailed description, see "Ores of North Carolina," p. 155. This body of schists gradually narrows towards the north-east, and the range extends only three to four miles north-east of the Catawba River; to the south it extends into South Carolina. This range naturally divides itself into two sections—the northern in Lincoln and Catawba, the southern in Gaston and in South Carolina.

Commencing with the most northerly of the well-known and productive beds in Catawba County, the succession is: Powell ore bed, Littlejohn, Abernathy, Mountain Creek, Deep Hollow, Tillman, Beard, Morrison, Robinson, Stonewall, Brevard and Big Ore Banks; the last four are in Lincoln. Several furnaces and forges have been supplied with ore from these beds, particularly the Big Ore Bank, for a very long period, and the quality of the iron manufactured has always been good. Limestone for fluxing is found in an adjacent parallel series of beds. Only charcoal iron has thus far been made. These beds occur with well-marked characteristics, as do also the horizons connected with them. The ores are mostly of a schistose structure, and may be described as magnetic or specular schists, and commonly require some

dress-ing before use in the furnace. For a considerable part of their course there are two parallel beds, the combined thickness being from four to twelve feet, and in the Big Ore Bank occasionally eighteen feet. The following figures show the general range of the ores:

	Big Ore Bank.	Stonewall Bank.	Powell Bank.
Iron.....	67.12 per cent.:	55.40 per cent.:	64.21 per cent.
Phosphorus..	.006 per cent.;	.011 per cent.:	.009 per cent.
Sulphur.....	.12 per cent.		

Owing to the system of working by leases only a moderate depth has been reached. Some subordinate beds as, for instance, the Paine in Catawba, and the Graham in Lincoln, are a little removed from this series, while several well-known mines in these counties are entirely remote, viz.: The Barringer, in Catawba County, six or seven miles north-east of the Fony Bank, with others in the same vicinity; and in Lincoln a limonite locality two miles east of Lincolnton, another like body seven miles north-west, and one five miles south of Cottage Home.

The south part of this range in Gaston is likewise crowded with equally valuable min s. Among them is the Costner, five miles south-west of Dallas, with a vein ten to twelve feet wide; the Ellison, one mile south-west; the Ferguson, one and one-half miles further on; the Fullenwider, one and one-half miles still further south-west. The Yellow Ridge lies two miles south-east of Kings Mountain village. The Mountain Ore Bank is one mile nearly north-west from the Ferguson, with a vein four to eight feet wide; the Ormond, one and one-half miles in the same direction. The latter has a magnificent vein eight to sixteen feet thick, and even more occasionally. This mine is a large producer of a very pulverulent ore of high grade and purity, admirably adapted for "Fix" and largely used. The subjoined analyses show the general character of these ores:

	Costner.	Ellison.	Yellow Ridge.	Mountain.	Ormond.	
					Powder Ore.	Block Ore.
Iron.. ..	66.75	52.61	61.743	57.50	65.67	67.97
Phosphorus ..	none	none	trace	none	.013	.023
Sulphur, per cent	none	none	.033	none	trace	trace

The Atlanta and Charlotte Railroad passes in close proximity to all these Gaston County beds. The Ormond is connected by a branch road, over which heavy shipments of ore are daily made to Birmingham and to Richmond at very satisfactory rates to the producers. No furnaces are at present in operation.

The ores of Yadkin, Surry and Stokes Counties occupy a relation to the Pilot and Sauratown Mountains similar to that of the Gaston and Lincoln ores to the Kings Mountain Range, and divide themselves into two groups.

The Stokes magnetic belt is fully twenty miles long and four to five wide, in a series of parallel beds. There is a good body of ore on the Lee Nelson place five miles north-west of Danbury—the Grandfather Ore Bank:

Iron.....	47.23 per cent.
Titanium.....	.12 per cent.
Sulphur.....	.006 per cent.
Phosphorus ..	.081 per cent.

The Rogers Ore Bank, two and one-half miles north of Danbury, is eight feet thick; the ore is magnetic, and has been largely worked. Analysis:

Iron	49.03 to 65.34 per cent.
Phosphorus	none.
Sulphur	trace.

The Danbury Furnace property, adjoining the town of Danbury, has several veins of high-grade and pure magnetic iron; among them is the Kiser Bank. Other localities of rich magnetic iron ores are known in the Sauratown Mountains among the head waters of the Dan River, but have not yet been opened. On the northern boundary of this belt is a zone of brown hematite.

The magnetic belt above alluded to extends south-west into Yadkin County. The most prominent of these occurrences are, the Hobson mine (several veins), ranging in contents from 40 to 60 per cent. iron, and practically free from either sulphur or phosphorus; among these are the Sand, Black, Hutchins, Upper and Shield Banks. Magnetic ore is also found at East Bend, and across the Yadkin River at Maxwell's, in Davie County, near its southern boundary, and at Allen's, seven and one-half miles north-east of Mocksville.

In Surry County, on Tom's Creek, a few miles north-west of the Pilot Mountain, is a deposit of magnetite which has been worked to supply a small forge near by for more than one hundred years. Hyatt's bed is near the junction of Bull Run Creek and Ararat River; Williams' ore bed is four miles north-west of Rockford.

The Stanly hematite ore beds, of considerable width, are between Elkin and Dobson. The analysis gives:

Iron	52.62 to 54.52 per cent.
Sulphur35 to .41 per cent.
Phosphorus	trace.

The resources of Forsyth County have never been examined.

Magnetic iron is found occasionally in Alleghany County. Only two places have attracted attention—in the north-west corner of the county in the angle between Surry and the Virginia line, and at Atwood's, four miles south-west of Sparta.

There are many valuable beds of limonite extending from the north-east foot-hills of the South Mountains in a north-east direction into the Brushy Mountains. From Jacobs' Fork of Catawba River, near the eastern border of Burke, across the Catawba and by way of Gunpowder Creek to the waters of Middle Little River, near the eastern border of Caldwell, and beyond to the northern slopes of the Brushy Mountains, the same ore occurs with similar associations. Near the town of Hickory is a five-foot bed, and three miles west is the Propst mine. Limonite occurs on Chestnut Hill, near Icard's, and magnetic iron six miles south-west from Morganton. At Ore Knob, near by, are several outcrops of red hematite. A like series of limonite beds are found on Gunpowder Creek. So numerous, indeed, are these beds that only an enumeration can be attempted. Middle Little River, McIntyre's

Mountain, Bald Mountain, and Miry Branch, show outcroppings for a distance of two to three miles. On Steele Creek, in the north-west part of Burke, are outcrops of magnetite and hematite. Limonite also occurs at Brindletown. A bed of superior magnetite is found on Warrior Creek, not far from Patterson's in Caldwell, which is traceable for hundreds of yards; a like ore is also reported to exist in large quantities on Mulberry Creek. Fine martite schist is found at Richlands, analyzing:

Iron	67.32 per cent.
Phosphorus	none.
Sulphur06 per cent.

At Bull Ruffin, some ten miles north-east of the above, in the edge of Watauga County, is a similar ore of the very highest character:

Iron	67.67 per cent.
Phosphorus	trace.
Sulphur025 per cent.

Magnetic iron is found at Farthing's farm, five and one-half miles north of Lenoir, containing:

Iron	57.14 per cent.
Titanium	none.

This whole range passes into Surry County, seventy-five miles distant, where, at Fisher's Peak, near the Virginia line, beautiful martite schist is also found. Titaniferous iron ore is found on Curtis' farm, near Richlands, in a bluff at least forty-five feet thick:

Iron	37.10 per cent.
Titanium	36.40 per cent.
Phosphorus	trace.

Some attention has lately been given to the limonites of McDowell County, in the south-west part of Linville Mountains. Among these localities are Connolly's, Flemming's, Pinnacle, Paddy's Creek, in the gap on top of Linville Mountains; at Shortoff Mountain and extending on to Carson's Ore Bank of the North Fork; also in Peter's Cove, near the Yancey iron mines, where magnetic iron occurs; magnetite is also occasionally found at other points in this mountain. There is an abundance of limestone near by for fluxing. Limonite also occurs in the same range, at Ore Mountain, just over the line in Buncombe County. In Mitchell County are several beds of limonite one mile south-east of Bakersville, at McKinney's; also four miles north-west of Flat Rock. But the abundant and pure magnetites of Mitchell are the chief resources of this section. Here, on the western slope of the Iron Mountain, and three miles from the Tennessee line, is found at Cranberry the largest deposit of magnetite in this section. The prevalent rock of the mountains here is hornblende, schists, etc.; the ore is a pure magnetite associated with pyroxene and epidote. The length of this outcrop is about 1,500 feet, and its width 200 to 800 feet. The operations are quarrying, rather than mining. The ore is practically free from phosphorus and sulphur, and with some care in handling can be brought up to 60 or 68 per cent. of iron, though the shipments on a large scale are somewhat lower. The purity of the ores has given them a wide reputation, and they are largely used for mixing.

Other beds of magnetite occur in the same neighborhood along the face of the same mountain in both directions from Cranberry, and there is an extensive range of iron ore beds in this region of the greatest value. At Flat Rock, five miles south-east of Bakersville, is a large vein, and at Rock Creek, the same distance west on Rock Creek, are several beds. Unexplored beds are known near Bakersville, and two beds to the north-west, near the State line, and on the head waters of Big Rock Creek at the foot of Roan Mountain. This region is of the highest promise, and with adequate facilities would afford enormous supplies of ore to this most important industry.

The inaccessibility of Ashe County will soon be a thing of the past, and the hope of profitable investment has stimulated a more careful examination of this section, both by private parties and by the State and National governments. So far as the results have been made public, the iron ore deposits seem to group themselves into three nearly parallel ranges.

The first is found just to the north-west of the North Fork of New River, which crosses the county in the center and nearly diagonally from south-west to north-east. This Ballou or River Belt is about six miles long, and is cut in its center by Little Helton Creek. The veins range from two to twelve feet in thickness, and the ore is magnetite of high grade, ranging from 45.5 to 67.35 per cent. of iron, and traces only of sulphur and phosphorus; the localities are Brown's, Ballou's, Gentry's and Lundford's.

The second belt—the Red Hill or Poison Branch belt—commences near the Virginia line where it is cut by the North Fork, and extends in a south-west direction nearly across the county. The more important developments are, commencing on the north-east, Lee Pugh's, J. L. Pugh's, Smith's, Dancy's, Black's, Red Hill, Helton Knob, McClure's, Blevin's, French's and Hampton's—a distance of perhaps fifteen miles. The veins range in width from two to ten feet, and the ore is mostly magnetic, sometimes manganiferous, of great purity and satisfactory richness. The titaniferous belt is in the north-west part of the county, commencing near the head waters of Little Helton Creek, near the Virginia line, and extending nearly five miles. It is about three miles north-west of the Red Hill belt. The prominent points are Young's, McCarter's, Pennington's and Kirby's. The width of these veins is considerable, ranging from eight to twenty-five feet. The contents in iron are satisfactory and the purity is assured, but titanium is almost invariably present, sometimes exceeding eight per cent.

The iron ores of the south-west mountain section from Buncombe westward to Cherokee are imperfectly known, and only an enumeration of places will be attempted. In Madison County magnetite is found on the head waters of Ivy Creek, and so also is titaniferous iron; magnetite also occurs at the Smith Mine near the mouth of the same creek, and on Upper Spring Creek; on Bear Creek, below Marshall; on the eastern fork of Big Laurel; and at the Redman and at the Sikes mines, near Marshall. Prof. C. D. Smith locates three zones in this county.

Five miles from Asheville is found a bed of limonite several feet thick, and a range of limonite beds, associated with the limestone, extends into Transylvania.

In the north-west part of Haywood, on Wilkins Creek, is a bold outcrop of magnetite. There are also magnetites and hematites in various localities of Jackson and Macon, where extensive deposits are reported. Magnetite is found in Macon at Fish Hawk Mountains, and at Elijah Creek, south-east of Franklin; at Angel's and at Washburn's at the head of Cartoogajay Creek. Limonite is also found at Quallatown in Jackson County.

No county in North Carolina contains so large stores of iron ore as Cherokee, but it is mostly limonite. The marble beds of Valley and Nolteley Rivers are everywhere accompanied by beds of this ore, there being sometimes as many as four parallel beds. The breadth of this iron and marble range is two to three miles. The river valley, extending in a north-east and south-west direction, is about twenty-four miles long, and there is a bifurcation of it some six or eight miles above Murphy, the eastern branch pursuing a more southerly course some six miles or more, making a series of deposits of thirty miles in length. At several points there are reduplications. At Valletown there are two parallel beds; at the Parker Gold Mine are three beds. At Colbert's, six or seven miles above Murphy, are iron beds, also a large bed at Mrs. Leatherwood's; at Mrs. Hayes' is another bed, and several beds or series of beds between this and Murphy. One-half mile below Murphy are four limonite beds, and beds at several other points down the river. On the eastward branch of the bifurcation above alluded to, are similar beds at something like a dozen points as far to the eastward as Brasstown Creek. The quantity of ore is immense and widely distributed, and it is of fair grade in its iron constituents.

These notes are necessarily brief, and have been confined to those points which have been more or less investigated and are comparatively accessible; nevertheless, the points mentioned are but a part of a large whole. The reader who desires to look into the current information will find many details in the "Ores of North Carolina," and in the various bulletins published by the State.

MANGANESE.

Ores of manganese are not abundant in North Carolina, though found to some extent in connection with gold, silver and iron ores. There is a very promising bed of psilomelane in Caldwell County, five miles west of Lenoir, and at Perkins' Mine, ten miles west of Lenoir, is another bed of oxide of manganese one foot thick. A large bed is reported at Lowe's, in Surry County. At Blue Ridge Gap, in Mitchell County, is a bed of pyrolusite. A small seam occurs near Danbury, Stokes County. The manganiferous ores of Buckhorn Mine have been described under the head of Iron. A manganese ore from Jackson gave manganese 53.61 per cent. There is a series of beds associated with the Kings Mountain schists of Gaston and Lincoln; a sample from near



TROUT FISHING IN THE LINVILLE.

Briggs' Forge gave manganese 21.450 per cent. A similar vein is found near Graham's, in Lincoln County, which appears to be nearly six feet thick; a like vein (or probably the same vein) is found near Vesuvius Furnace, which contains manganese 13.50 per cent., and was used as a good mixing ore.

CHROMIC IRON.

This ore is found to some extent with the iron ores of various parts of the State, especially in the Tuscarora Range in Guilford, and also with the chrysolite beds of Jackson, Yancey and Mitchell Counties. The most prominent occurrences are near Webster, and at Hampton's, near Burnsville. The former gave chromic oxide 63.32 per cent.

COBALT AND NICKEL.

These metals are found very frequently in the auriferous sulphides of the State, but in no known instance in economical quantities. Nickel is found quite generally associated with the chrysolite range in amounts varying from 0.15 to 0.35 per cent., and with traces of cobalt. Prof. Phillips reports some good specimens from Ellijay Creek, Jackson County, and one (garnierite) from Bowman's Bluff, Henderson, containing 14.89 per cent. metallic nickel.

ECONOMIC MINERALS.

PYRITE.

Pyrite is one of the most common minerals of North Carolina. It is not only found in globular crystalline masses in many of the marl beds of the Eastern counties, but many of the gneissoid rocks and slates contain it in considerable quantities, and, besides, it is found in almost every mine of the State. In the gold mines the associated pyrite is generally auriferous. Large veins of compact pyrite are now being worked in Gaston County, and promising deposits are reported as occurring in several other counties, especially in Jackson County, near Balsam Station on the Murphy Railroad, a large deposit is said to occur.

MICA.

Since 1869 mica mining has been an important industry in several counties of the mountain region, especially in Mitchell, Yancey and Macon, and to a smaller extent in Jackson. Buncombe and Haywood Counties. The aggregate yield of cut mica to date has been more than half a million pounds, valued at not less than a million dollars. A new branch of the industry is now springing up in the grinding of the waste mica (nearly nine-tenths of the whole) into a fine powder, which

is used in lubricants and for other purposes. The mica occurs as large crystals, associated with quartz and feldspar, in veins of considerable extent, situated in the gneisses and crystalline schists.

KAOLIN AND FIRE-CLAY.

Kaolin is found in many of the Midland and Western counties of the State in deposits varying in quantity and quality, and suitable for various uses, china and other wares, paper-making, and for fire-brick. The largest deposits of pure white kaolin are found in the Western counties as a product of decomposition of the feldspar in large veins. A number of these veins have been worked during the past few years. The largest is that worked by the Carolina Clay Company, near Webster.

Beds of fire-clay and potters clay also abound in the more recent geological formations of the Eastern and Midland counties. The two largest deposits of fire-clay, at present known, are one near Spout Springs in Harnett County, on the Cape Fear and Yadkin Valley Railroad, and on the Northwestern North Carolina Railroad, about four miles southwest of Greensboro. Fire-brick from both these beds have stood satisfactorily the severest furnace tests. Clay from the latter of these deposits is now being manufactured into fire-brick and terra-cotta ware on a considerable scale. Fire-clay is also said by Emmons to be abundant in Gaston County, and there is a deposit covering a considerable area on the Murphy Railroad, three miles west of Asheville, from which fire-brick are now being manufactured.

TALC.

Foliated and fibrous talc occurs in many places, but the large workable beds of this mineral appear to be limited to Macon and Cherokee Counties. Here on the Nantahala River in Macon County, and on Valley and Nottely Rivers in Cherokee, massive fibrous and foliated white talc occurs in irregular lenticular masses in the beds of marble, and is being mined and ground at several points for use in the arts and manufactures.

Soapstone, an impure variety of talc, in the form of a greenish and grayish massive or slaty rock, is widely distributed in the State, and is mainly used locally for chimney and furnace hearths and linings.

AGALMATOLITE

Is found in the southwest corner of Chatham County. This is a large deposit belonging to the slate series (Kerr's Huronian), which has quite an extensive range, occurring in Montgomery and parts of Chatham. It is popularly called soapstone, and has the soapy feel of that mineral, but contains only 3.02 per cent. of magnesia. This substance has been an article of trade to New York on a large scale, and for many years. It is used in the manufacture of paper—wall-paper especially—soaps, cosmetics, pencils, &c., and for various adulterations.

BARYTE.

Small deposits of baryte are to be found in many places in the State, but only a few deposits are worthy of mention here. A vein of very white compact granular baryte, of from seven to eight feet in width, has been found at Crowder's Mountain. Another vein, eight feet in width in places, of the white granular variety, has been worked to some extent at Chandler's, nine miles below Marshall, in Madison County, and other veins are reported as occurring in this region.

WHETSTONE.

Among the silicious argillytes, so abundant in the region described by Kerr as Huronian, there are frequent beds of novaculite or whetstone. One of the best localities is a few miles west of Chapel Hill, from which these stones have been carried in all directions. Other quarries are found in Person County, near Roxboro; in Anson, not far from Wadesboro; in Montgomery and adjoining counties on the great slate belt, and, in fact, almost every section of the State has its own quarries, which either do or might supply the local demand, at least in part and as to articles of the commoner grades.

MILLSTONE AND GRINDSTONE GRITS.

The sandstone of the State is, in many places, well adapted to the purposes of grindstones, and during the war, while the foreign supply was cut off, they were largely so used. The Anson County quarries furnish a very fine grindstone and whetstone grit.

The conglomerates of the triassic series, which are associated with and replace the sandstones above mentioned, have been long and widely used for millstones. They have been principally obtained from Moore County, on McLendon's Creek, where they are obtained of excellent quality, and they have been distributed from this point over a large number of intervening counties to the Blue Ridge. Some of these stones have been in use for fifty years, and they are occasionally found to be nearly equal to the French buhr-stone.

The coarse porphyroidal granites and gneisses, which are scattered over so large a part of the State, are, however, the most common material for millstones; and in the Eastern section the shell rock is often partly or wholly silicified, forming a sort of buhr-stone, as in Georgia, and is well adapted to the same uses. In Madison County, in the crystalline schists in Laurel River, there is an irregularly laminated whitish quartz, occurring in large veins, which is used for millstones, which are reported to be a good substitute for buhr stone.

CORUNDUM.

Corundum has been found in considerable quantities in several counties; notably Macon, Clay, Jackson, Haywood, Madison and Ire-dell, and in smaller quantities it has been found in many other places. During the past several years mining for corundum has been an impor-

tant industry in Macon County at Corundum Hill and on Buck Creek. During the present year (1892) extensive mining operations have been in progress at several places in Macon and Jackson, and on a smaller scale in Iredell and a few other counties.

MARLS.

Marl is very abundant in twenty-five counties in North Carolina, very widely distributed and of several kinds, the principal of which are four, viz.: Green-sand, eocene, miocene and triassic. The first has generally but a small percentage of carbonate of lime, 5 to 30; the second, usually 40 to 95; the third, 20 to 60; and the fourth, generally less than 50. The last is of little consequence as a fertilizer, because of the very limited extent of its outcrops, and it is scarcely used where abundant.

GREEN-SAND MARL occurs throughout the Southeastern region of the State, between the Neuse River and the Cape Fear. It comes to the surface, as stated, along the banks of the Cape Fear and Livingston's Creek, on Black River and South River, on the Neuse River and its tributaries about and below Kinston, along the Contentnea and Moccasin, and a few points even as far north as the Tar River.

EOCENE MARL.—The marls of the next formation, which are always found overlying the preceding, when the two occur together, are either a calcareous sand, passing in places into a friable sandstone, coarse or fine, or a fine calcareous clay, or a conglomerate shell limestone, more or less compacted, and occasionally semi-crystalline. They are composed of comminuted shells, corals and other marine exuviae.

MIOCENE MARL.—These are commonly known as shell marls, or blue marls. They are found in limited patches or "beds," and are scattered over a much wider territory than either of the preceding, and being nearer the surface, and so more accessible, have been much more extensively used, and are consequently much better known. They are found throughout a large part of the Eastern region, from South Carolina to Virginia. In fact, they occur in all the counties of Eastern North Carolina, except those lying between and north of the great sound, and two or three small outcrops have been observed in Chowan and in the northern part of Currituck. The western boundary of these beds is very nearly represented by a line parallel to and three or four miles west of the Wilmington and Weldon Railroad, from Halifax to Goldsboro. Southward, the inland boundary is found to be generally but little west of a line connecting the latter point and Lumberton; that is, a line parallel to the coast and about sixty-five miles distant from it.

GRAPHITE.

This mineral, in small quantities, is quite widely distributed in North Carolina in the crystalline rocks, both slates and gneisses, and there are beds of a more or less impure slaty and earthy variety in several sections of the State, the principal of which are two: one in Gaston, Lincoln and Catawba, as a constant associate of the argillaceous and talcose slates and shales which belong to the Kings Mountain slates, and the other in Wake County.

The Wake County beds are the most extensive, as well as the best known, graphite beds in the State. They extend in a northeast and southwest direction for a distance of sixteen or eighteen miles, passing two and a half miles west of Raleigh. The thickness is two or three, and occasionally four feet. The eastern (and longitudinally the most extensive) bed is nearly vertical. It was opened at a number of points many years ago and has been worked on a small scale, at intervals, during the past few years. It is a bed of quartzitic and talcoargillaceous slates, which are more or less graphitic, from about twenty or thirty to sixty per cent.

COAL.

The coal fields of North Carolina are referred to the triassic system. There are in the State two narrow belts which belong to this system. The smaller, or Dan River belt, from two to four miles wide, following the trough-like valley of that stream (about north 65° east) for more than thirty miles from Germanton to the Virginia line. The other, the Deep River belt, extending in a similar trough five to fifteen miles wide (and depressed 100 to 200 feet below the general level of the country) from the southern boundary of the State in Anson County, in a northeast direction, to the middle of Granville County within fifteen miles of the Virginia line.

The most important and conspicuous member of both series is a large body of black shales, which encloses seams of bituminous coal two to five feet.

The coal, with its shales, outcrops along the northern margin of the belt at various points for more than fifteen miles, and many shafts having been sunk to and through the main seam, which is the upper one, it is ascertained to be very persistent in all its characteristics and associated beds.

In the Deep River basin Emmons reports five seams of coal, separated by black shales and slates, black-band iron ore and fire-clay; and gives the area of this coal field as 300 square miles. The Egypt Coal Company is now engaged in mining this coal, and the output is reported even larger than the company had been led to expect.

During the past few years this coal has been mined at Egypt, and arrangements are being made for mining at other places. The coal varies from bituminous to a semi-anthracite in quality, containing from 68 to 85 per cent. of carbon, and from 5 to 33 per cent. of volatile matter, from 5 to 10 per cent. of ash, and from 5 to 3.5 per cent. of sulphur. It cokes well, is an excellent coal for gas, and is suitable for a variety of furnace work.

In the Dan River basin coal is exposed at a number of places near the southeast border of the formation, along the road on the south side of the river, between Germanton and Walnut Cove. At a few points it is a bituminous coal of fair quality, and the seam from two to four feet thick. The outlook for the occurrence here of workable beds of coal is promising, and some prospecting has been carried on during the present year, but the result has not yet been fully determined.

Black bituminous shales appear at various points in the direction of Madison and Leaksville. Near this latter place, a slope was driven some sixty feet on the coal seam three feet thick, and dipping 35° northwest; but here, as at several of the places prospected near Walnut Cove more recently, the coal is so impure that it can hardly be considered more than a highly carbonaceous shale.

GEMS AND PRECIOUS STONES.

The discovery several years ago of emerald and hiddenite in Alexander County, where mining operations on a considerable scale have been carried on, may be fairly said to have inaugurated a new industry in Western North Carolina—the search for gems. This industry has now grown to considerable proportions. The larger amount of mining has been done in the explorations for hiddenite, emerald, beryl and rarely tinted garnets, but a limited amount has also been done in searching for ruby corundum, sapphire, oriental emerald and topaz, kyanite, rock crystal, and other rare minerals. Only a few notes can be given here relative to the more important gems.

DIAMOND.—Thirteen small diamonds have been found in the State, seven of which were discovered in the gold-bearing gravel beds in Burke, Rutherford and McDowell Counties, centering about the Brindletown region. Of the others, one has been found in Lincoln, two in Mecklenburg, two in Franklin and one in Richmond County.

HIDDENITE is an emerald-green gem, a variety of spodumene, found at Stony Point, Alexander County, where it occurs in the soil and in cavities in gneissoid rock, along with emerald (beryl), monazite, rutile, allanite, quartz crystals, etc. A considerable amount of mining for these gems has been carried on during the past few years, and both hiddenites and emeralds of rare beauty and considerable value have been obtained. Hiddenite was named after Mr. Wm. E. Hidden, of New Jersey, by Prof. J. Laurence Smith, who identified the mineral; to the energy of Mr. Hidden is due its introduction as a gem of rare value, but specimens of the native crystal were in the possession of Mr. J. A. D. Stevenson, of Statesville, N. C., for several years prior to this time (1881). This gem has not been found elsewhere than at this locality.

EMERALD—A beryl of emerald-green color has been found in the North Carolina mica veins in Mitchell and Yancey Counties, and at Stony Point, Alexander County, as a gem material of great beauty.

AQUAMARINE.—Bluish green, transparent beryl, has also been found in small crystals and masses in many of the mica veins of Mitchell, Yancey, Alexander and other counties. This is more abundant than the emerald. Both were often thrown away on the dumps about the mines several years ago, but they are now watched for carefully in mining for mica, and, in some cases, the transparent beryl is the material for which the mine is operated.

Many fine beryl crystals of different colors, and ranging in size from very small to more than two feet long and seven inches in diameter, have been collected at these mica mines, and some from other formations.

RUBY.—The ruby corundum has been found in Clay and Macon in considerable quantity, and to some extent in Jackson, Iredell, Mitchell and Gaston Counties. Perhaps the most noted locality has been Corundum Hill, in Macon County, where many fine gems have been found.

SAPPHIRE.—The sapphire corundum has been found in many of the localities named for the ruby, but is more rare. Nevertheless, a considerable number of pretty gems have been discovered. The same is true in regard to the oriental gems—emerald and topaz.

KYANITE is a widely distributed mineral in the State. At several places it has been found in specimens of sufficient clearness and beauty to be cut as a gem. The finest material yet discovered was found on Yellow Mountain, near Bakersville. It was of a beautiful deep-blue color, and from it were cut gems equal to the finest sapphire in appearance.

ROCK CRYSTAL is abundant and widely distributed. Many rare and interesting forms have been found, and some remarkably large crystals, nearly three hundred pounds in weight, have been found in Ashe County. Many and beautiful specimens of rutilated quartz, and smoky quartz (cairngorm) have also been found at a number of localities.

OPAL.—A number of specimens of opal and opalescent quartz have been found in Cabarrus and other counties during the past few years, some of the specimens of considerable beauty and value.

AGATE.—Specimens of common agate have been found in Cabarrus and Mecklenburg Counties, and among them a few handsome gems. Some fine specimens of moss-agate have been found in Orange County.

GARNET is widely distributed throughout the State, and is a constant constituent of many of the mica and hornblende slate, and also of the talcose and chloritic slates. Larger crystals of a brownish-red color are frequently met with in the mica mines of Mitchell and Yancey Counties. The most beautiful and perfect large crystals of the brownish-red color, are found in Burke, Caldwell and Catawba Counties. Some of these when cut show a peculiar play of colors. Large crystals and crystalline masses of a reddish-brown garnet are found in Macon and Mitchell Counties. Pyrope of good color has been observed in Burke and McDowell Counties. The massive manganese garnet is abundant in Rutherford, Chatham, Stokes, Cabarrus, Lincoln, Gaston and Rockingham Counties. At a locality eight miles southeast of Morganton, several tons of garnets were collected and used in the manufacture of sand-paper. The rarest colored garnets, for gem purposes, are found in Macon County.

ZIRCON.—Small zircon crystals abound in the gold sands of Burke, McDowell, Rutherford, Caldwell, Mecklenburg and other counties, in yellowish-brown and brownish-white, sometimes amethystine, pink and blue colors. Large grayish-brown crystals of zircon are found so abundant on the south side of the Blue Ridge, near Green River, Henderson County, that in 1869 General Clingman easily obtained one thousand pounds in a few weeks, and a few years ago over thirty tons were mined at this locality, where the crystals are found bedded in a decayed feldspathic gneiss.

In addition to the above, it is worthy of mention that specimens of malachite, rutile, tourmaline, spinel, chrysolite, lazulite, carnelian and jasper, all of considerable beauty, have been found in different localities in the State, and promise supplies of new gem material.

PEARLS.—From the mussels in some of the creeks and ponds of the State, are occasionally found pearls of fair quality.

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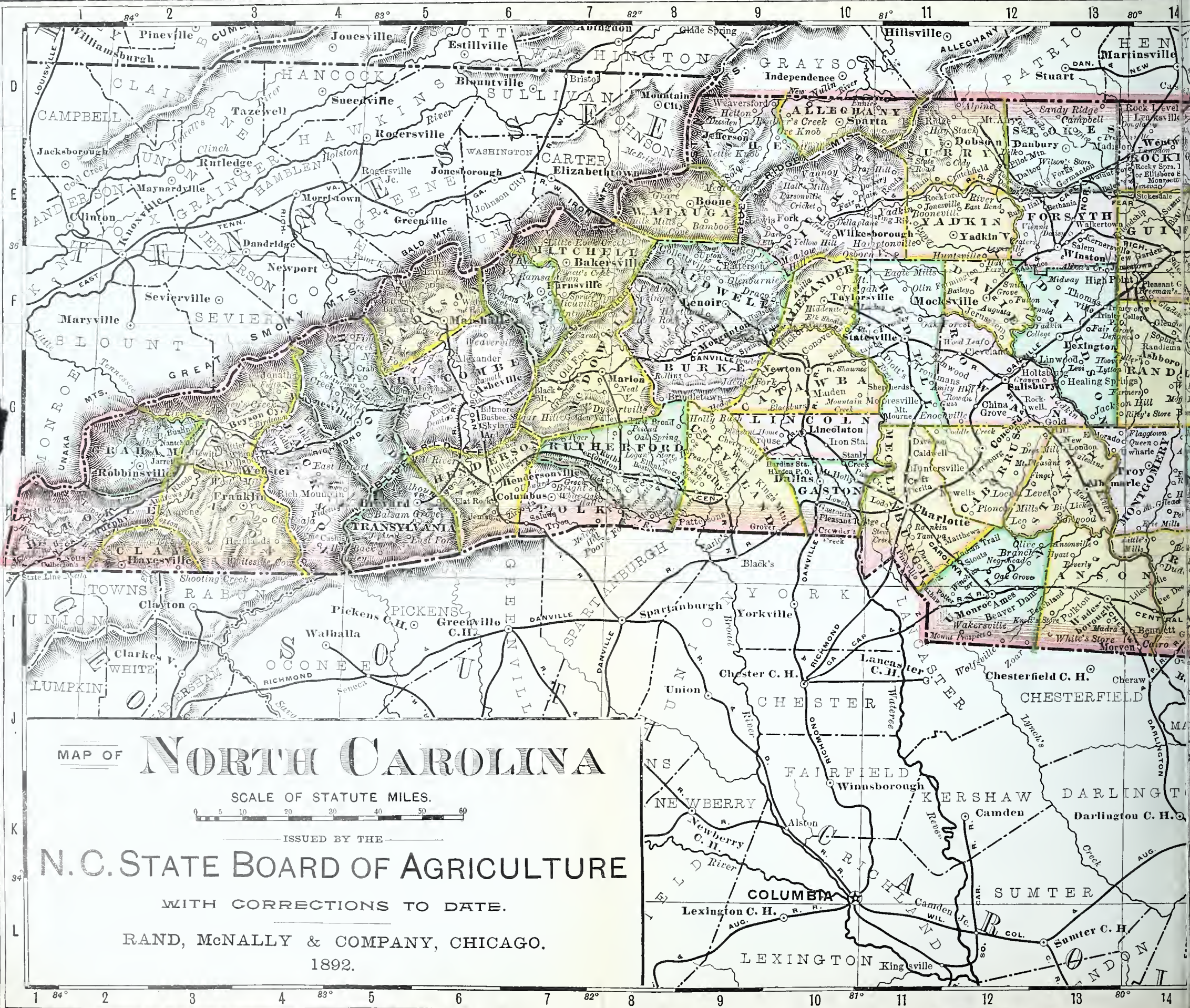
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MAP OF **NORTH CAROLINA**

SCALE OF STATUTE MILES.



ISSUED BY THE

N.C. STATE BOARD OF AGRICULTURE

WITH CORRECTIONS TO DATE.

RAND, McNALLY & COMPANY, CHICAGO.
1892.

